



Local public procurement regulations: The case of Italy



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ABSTRACT

Regional and local authorities award 54% of the public works contracts submitted to the Authority for the Supervision of Public Contracts. This paper analyses the regulations adopted in the period 2000–2010 in all Italian regions and a sample of provinces and municipalities and shows how highly pervasive they are. In some cases they had positive effects that served the specific needs of the territory; in others, an anti-competitive orientation prevailed, with extra costs for the contracting authorities and less efficient allocation of resources. The paper's policy recommendations include: (i) greater coordination of reforms between the central and the local levels; (ii) an enhanced role for the sector authorities; (iii) improvements in national regulations so that the regional and local authorities have less of an interest in modifying them; (iv) greater transparency and better information quality.

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1. Introduction

Local governments often play a crucial role in providing services to their citizens. Although some of these services are sometimes directly provided by the local governments using their own employees, it is common for local governments to contract with private firms for their provision. This implies that despite a country might have a national public procurement regulation, a relevant share of public procurement might take place under the specific rules set by local governments. Although in depth studies of local public procurement regulations are missing, it is evident that the presence of local regulations creates a trade-off. On the one hand the local regulation could serve to address the specific needs of the territory, but on the other hand it could be used to foreclose the market to non-local firms.

In settings similar to the Italian one, where 54% of all contracts for public works are awarded by local governments (Regions, Counties and Municipalities), the paramount importance of this question is evident. Moreover, as shown by the studies of Marion (2007, 2009) on the California bidding preference system, the presence of a local public procurement regulation that differs from the national one can be particularly useful to empirically evaluate how different procurement regulations affect the cost and efficiency of

the public procurement process. The reason for this is the stability of the national regulations together with the difficulty to compare cross-country regulations. The combined effects of these features make the empirical evaluation of procurement systems particularly hard. However, in this paper we show how a careful look at local regulations can reveal a broad spectrum of interesting rule changes, leading to a clear empirical identification of their effects.

In this paper, we look at the Italian public procurement sector as an almost ideal case study to analyze the effects of a decentralized procurement system on procurement cost and firms competition. Indeed, the Italian system is characterized by hyper-regulation at the regional and sometimes also at the municipal level, which makes legal compliance particularly burdensome for both entrepreneurs and contracting authorities. This occurs despite the fact that the Public Procurement Code (Legislative Decree No. 163 of 12 April 2006) expressly prohibits any local regulation that differs from the provisions of the Public Procurement Code, among other things, on the qualification and selection of private contractors, award procedures and criteria, design and safety plans. We will present both a legal and an economic analysis of the impact of local regulation along some of these dimensions affected by local rules. We will also present an empirical analysis more narrowly focused on reforms of the awarding mechanism and bid qualification requirements.

More specifically, the paper is divided as follows: the second section describes the national regulations on public procurement, the limits set by the Constitution for Regions and Local Authorities

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and the regulatory constraints arising from European law; the third section analyses the regulations adopted in the period 2000–2010 by all Italian Regions and a sample of Provinces and Municipalities (selected according to population and economic value criteria); based on the findings of the economic theory of auctions, the fourth section provides some evaluations of local regulations described in the previous section; the fifth section provides an empirical analysis aimed at quantifying the effects produced by the different local regulations; the sixth section concentrates on the critical aspects in the regulation of public works in Italy, providing a close examination of possible corrective measures. The seventh section concludes.

2. Public work contracts: the division of competences and national regulation

The Italian regulation governing the award of public works has undergone a number of reforms over the last fifteen years (Decarolis et al., 2010), in response among other things to EU law, aimed at improving the “design” of award procedures and enforcing the principles of publicity, transparency and equal treatment.¹ Alongside the development of national legislation, there has been a proliferation of regulatory initiatives at the local level (Regions, Provinces and Municipalities). This has led to a significant instability of the regulatory framework, leading to uncertainty for public and private operators in the sector. In what follows, on the one hand, we describe the division of competences between the State, Regions and Local Authorities provided in the Constitution and the limits arising from European law; on the other hand, we provide a brief discussion of the national regulation for the awarding of public works.

2.1. The division of competences: the principles laid down by the Constitutional Court

The Italian Constitution is “ambiguous” about the subject “public works” or “public contracts”, which is not enumerated in the Constitution: this makes unclear whether legislative powers on such subject belong to the State or to the Regions.

However, Article 4.3 of the Public Procurement Code (henceforth the “PPC”) expressly prohibits local legislation, among other things, of the qualification and selection of private contractors, award procedures and criteria, design and safety plans. On several occasions the Constitutional Court has intervened to affirm the legitimacy of the provisions of Article 4 of the PPC, rejecting the appeals of many Regions alleging infringement of the division of competences under Article 117 of the Constitution, and linking the principles of publicity, transparency and equal treatment to the protection of competition, attributed to the exclusive legislative powers of the State pursuant to Article 117(2)(e) of the Constitution.

Again with reference to the powers of the Special Statute Regions and the Autonomous Provinces of Trento and Bolzano² (despite having said that this kind of specific assignment must be applied if the special statute confers primary legislative powers in

¹ There are now three different systems for selecting contractors: (i) for “strategic infrastructures”, aimed at giving high priority to these projects; (ii) as introduced by Law 2009/2 of 28 January 2009, for projects falling within the National Strategic Framework; (iii) the “ordinary” system, governed by Legislative Decree No. 163 of 12 April 2006, known as the Public Procurement Code (PPC), for all other types of project. In this paper we analyze the “ordinary” system, which applies to most projects.

² In Italy Special Statute Regions (Valle d’Aosta, Friuli Venezia Giulia, Sicily and Sardinia) and the Autonomous Provinces of Trento and Bolzano benefit from special forms and conditions of autonomy, greater than those of Ordinary Statute Regions (Di Vita, 2012).

the field of public works to these Authorities³), the Constitutional Court has made it clear that in the exercise of their primary legislative powers, these Authorities must comply with the provisions contained in the PPC, which – to the extent that they are related to Article 117(2)(e) of the Constitution, and to the protection of competition – must be ascribed to the area of the fundamental rules of economic and social reform, and the rules by which the State has given effect to international obligations arising from participation in the European Union, which also limit the primary legislative powers of Special Statute Regions.⁴

As regards the powers of Provincial and Municipal Authorities, pursuant to Article 117(6) of the Constitution, these Institutions only have regulatory powers (not legislative) as to the organization and implementation of the functions attributed to them (they can only enact administrative resolutions): powers which, therefore, can never be exercised in conflict with national or regional laws.

2.2. Legislation at national level

Currently, the national legislation relating to procedures for the awarding of public works contracts is mainly contained in Legislative Decree No. 163 of 12 April 2006, which entered into force on 1 July 2006) and Presidential Decree No. 207 of 5 October 2010, which includes the regulation for the implementation and execution of the PPC, which entered into force, subject to certain conditions, on 9 June 2011). In what follows we provide a brief discussion of the legislation at national level, surveyed between 2000 and 2010, the time period to which the dataset analyzed in this paper refers, however reporting subsequent changes. In particular, we will focus on the following aspects: (i) award procedures and criteria and the assessment of so-called abnormal tenders or abnormally low offers; (ii) qualification requirements for companies; (iii) guarantees; and (iv) measures to combat the phenomena of corruption and organized crime.

(i) *Award procedures and criteria.* Open procedures and restricted procedures are “ordinary” procedures for the assignment of procurement contracts (in particular for contracts above the EU threshold). Both are marked by little discretionary power for general government entities in the choice of contractors and presume that the entity itself is capable of defining, accurately and from the outset, the subject of the contract and the relevant technical specifications, so that bidders may immediately submit definite, non-renegotiable offers (at least as far as the essential aspects of the contract are concerned). In the open procedure the entity publishes a call for tender containing, among other things, an accurate description of the subject of the contract. The call for tender precedes the presentation of the offers by all interested parties, whose fulfilment of the requisites is verified when the bids are assessed. The restricted procedure and the “simplified restricted procedure” applying to works worth less than €1.5 million⁵ provide for an initial prequalification phase to ascertain requisites and identify the enterprises to invite on the basis of predetermined objectives and non-discriminatory criteria and a subsequent phase, where the

³ According to Article 10 of Constitutional Law No. 3 of 18 October 2001, while respecting the Constitution, the principles of the legal order of the Republic and international obligations (including those arising from European law), given that in Title V of Part II of the Constitution there is no reference to “public works”. See, in particular, the sentence of 12 February 2010, No. 45 (Bin, 2010).

⁴ See, in particular, the sentence of 10 June 2011, No. 184 (Decarolis & Giorgiantonio, 2012).

⁵ This threshold, originally €750,000, was raised to €1 million by Legislative Decree No. 152 of 17 October 2008 (known as the Third Corrective Decree of the Public Procurement Code) and entered into force on 17 October 2008. The threshold was then raised to €1.5 million under Decree Law No. 70 of 13 May 2011 (known as the Development Decree) and became effective on 14 May 2011, converted into Law No. 106 of 12 July 2011.

administration only invites bids from the chosen subjects. In short, in open procedures the contracting authority must specify the full characteristics of the service both in the call for tender and in the related auction documentation, while in the restricted procedure these descriptions can be included in the invitation letters.

However, in the Italian system there is not that great a difference between the open and restricted procedures. The legislation says that in all “ordinary” restricted procedures for the assignment of public works worth less than €40 million all applicants possessing the requirements listed in the call for tender must be invited to participate.⁶ Therefore, all procedures are essentially open procedures.

The second key rule concerning contract awards is the specification of the criterion for determining the winner. Both procedures can use either the “lowest price” criterion or the “economically most advantageous offer” criterion (until 1 July 2006, when the Public Contracts Code was enacted, the lowest price was the “ordinary” award criterion).⁷ Under the “lowest price” criterion, the enterprise offering the lowest price is awarded the contract, provided that this price is judged to be “reliable”, pursuant to the regulations governing abnormal tenders; under the “economically most advantageous offer” criterion, not only price but a range of other parameters specified in the call for tender are assessed (e.g. the quality of the work or the time for completion as provided for in Article 83 of the PPC).

There are special rules for the assessment of so-called abnormal tenders or abnormally low offers (contained in Articles 86–89 of the PPC and Article 121 of the new Execution and Implementation Regulations), i.e. discounts on the publicly announced reserve price that fall below a threshold of “presumed anomaly”. This threshold is generally an endogenous function of the bids.⁸ Different methods to compute the threshold are used when the criterion is the economically most advantageous offer.⁹ Offers thus identified, presumably too low to be considered reliable, must, before exclusion, be subjected to a congruity check in debate with the interested parties.¹⁰ An anomaly check is carried out in the next phase of the bid assessment, with a request to the bidder to supply justifications for the price offered.¹¹ In any case, before any exclusion the

interested parties must be heard, so that they may indicate any element considered useful.

Until 1 July 2006, for contracts below the EU threshold (about €5 million) awarded at the lowest price, for which at least five tenders were submitted, it was imperative to exclude automatically (without hearing the enterprise) all bids below the anomaly threshold. After that date, the latter mode of exclusion became purely optional (provided it was stated in the call for tender). Then, when the Third Corrective Decree of the PPC became effective (17 October 2008), this possibility was limited to contracts with a value of less than or equal to €1 million and only if at least ten bids were admitted.¹² The Development Decree (enacted on 14 May 2011) and the Decree Law No. 69 of 21 June 2013 (enacted on 22 June 2013) provided again (respectively, until 31 December 2013 and until 31 December 2015) for the possibility to exclude automatically all bids below the anomaly threshold for contracts below the EU threshold (see new Article 253(20-bis) of the PPC).

Moreover, there is the possibility to use negotiated procedures, marked by significant discretionary powers for the administration, given that general government entities consult their chosen economic agents and negotiate the conditions of the contract with one or more of them.¹³ Insofar as these procedures represent a derogation to the general ban on renegotiating offers, they should be exceptional, being admissible only when specific conditions apply (chiefly those related to urgency or lack of appropriate offers or applicants).

However, the Italian legislature has gradually raised the threshold (originally set at €100,000) up to which the contracting authority has discretion to negotiate (the current threshold is €1 million)¹⁴: in this way the exceptional nature of the procedure has failed. The negotiation must take place in accordance with the principles of non-discrimination and equal treatment and apply the criterion of the most economically advantageous bid, and that with the lowest price. Further, in relation to these procedures, the regulation already analyzed for the evaluation of anomalous tenders applies, with the possibility of automatic exclusion in the presence of the circumstances described above.¹⁵

(ii) *Qualification requirements for firms.* The contracting authority finds, on the basis of the law and the characteristics of the work, the objective and non-discriminatory requirements which must be satisfied by companies to participate in the tender.

The possession of these requirements is mainly certified through a system called qualification of enterprises, introduced by Law No. 415 of 18 November 1998 (the “Merloni-ter” law) and Presidential Decree No. 34 of 25 January 2000 (now replaced respectively by the PPC and Presidential Decree No. 207 of 5 October 2010).

⁶ See Article 55(6) of the Code. Articles 62(1) and 62(2) state that in restricted procedures for works worth €40 million or more, a public administration – when so required owing to the difficulty or complexity of the work – may limit the number of candidates invited.

⁷ While the recourse to the economically most advantageous offer criterion was limited to specific circumstances: see Article 21 of the *Merloni* law.

⁸ In this case, verification is made on offers with a discount equal to or larger than the arithmetic mean of the percentage discounts of all the offers admitted, excluding the highest 10% and lowest 10% of offers (rounded to the next highest integer), increased by the mean arithmetic deviation of the discount percentages that exceed the aforementioned mean; however, if the number of offers admitted is less than 5, this criterion is not applied and the verification is made on offers that appear incongruous on the basis of specific elements. When the criterion of automatic identification of the anomaly threshold is not applied, in order to make a verification, the administration takes into account the best market price, where this is observable.

⁹ In this case a check is made of bids in which both the scores relating to the price and the sum of scores relating to the other assessment elements are equal to or greater than four-fifths of the corresponding maximum scores stated in the call for tender.

¹⁰ The choice of subjecting to a congruity assessment any other bid that appears abnormally low according to specific elements remains in any case at the government entity's discretion.

¹¹ In particular, public administrations require the justifications concerning the price items and other assessment elements of the offer and judge these elements (Article 86 of the PPC). These justifications may concern, for example, the costs of the construction procedure or of the production process, the technical solutions adopted, the exceptionally advantageous terms that the bidder can offer, and so on. However, the purpose of the anomaly check is not to detect specific individual inaccuracies but to ascertain the reliability of the offer as a whole.

¹² See Articles 122(9), and 86(1) of the PPC. These changes were introduced in the wake of criticisms against Italy in relation to the contrast of the previous regime with the EU principles on competition law: cf. ECJ judgement of 15 May 2008, joined cases C-147/06 and C-148/06.

¹³ Depending on type of information requirements, hence the greater or lesser discretionary powers of the PA, we may distinguish between two negotiated procedures: (i) negotiated procedure with the publication of a call for tender (Article 56 of the PPC), where the administrations publish a notice and, respecting the principle of equal treatment, negotiate offers with the bidders; (ii) negotiated procedure without the publication of a call for tender (Article 57 of the PPC), where administrations identify the operators with which to initiate negotiations.

¹⁴ More precisely, the use of the negotiated procedure without the publication of a call for tender (Article 57 of the PPC) is left to the reasoned choice of the contracting authority. The limit of €1 million was introduced by Article 4 of the Development Decree, which amended Article 122(7) of the PPC. Previously, the limit was set at €500,000 by Article 1 (10-*quinquies*) of Decree Law No. 162 of 23 October 2008, converted into Law No. 201 of 22 December 2008, that became effective on 23 December 2008, which in turn raised the initially established threshold of €100,000.

¹⁵ Finally, for particularly complex works (for which open or restricted procedures are not practicable: see Article 58 of the PPC), contracting authorities can use competitive dialogue.

Under this system the certifying bodies (“SOA’s”) are responsible for ensuring that companies meet the technical, financial and management requirements necessary for the purposes of the granting of public works contracts (Decarolis et al., 2010). The possession of the certificate issued by the SOA is a necessary requirement for participation in the award procedure of public works contracts for amounts exceeding €150,000. The qualification has a five-year term, with the obligation to ensure the maintenance of the requirements in the third year.

(iii) *The system of guarantees.* The current system provides for the constitution of sureties for the PA both in the bid submission phase (2% of the reserve price indicated in the call for tender or invitation)¹⁶ and at the contract award (an increasing function of the winning discount).¹⁷ The law also provides performance bonds, known in Italy as *garanzia globale di esecuzione* (global execution guarantee), governed by Article 129(3) of the PPC and Articles 129–136 of Presidential Decree No. 207 of 5 October 2010, which will come into effect in June 2014: the guarantor has to pay the contracting authority what it is owed as a definitive deposit; and at the request of the contracting authority, the guarantor must also have the designated substitute take over the completion of the project.¹⁸ Article 129 of the Code provides for the application of a comprehensive guarantee for the adjudicating authorities in ordinary sectors: (i) optional for procurement auctions worth over €100 million; (ii) mandatory for contracts involving the executive design and execution of public works worth over €75 million.

(iv) *Measures to counter corruption and criminality.* The law provides several measures to combat corruption and organized crime, among which the limits to subcontracting and anti-mafia certificates are particularly important. As regards subcontracting, it has been surrounded by numerous safeguards (Article 118 of the PPC), providing, for example, that it is admissible only where expressly provided for in the call for tenders and limited to 30% of the total contract value. Furthermore, the regulation of subcontracts, within the limits of Article 118(11) of the Code, applies to “any contract having as its object activities, wherever performed, requiring the employment of labour” (for example, operated equipment rental and supply with installation).¹⁹

As for the second point, in terms of preventive controls, Legislative Decree No. 159 of 6 September 2011, became effective on 13 February 2013 (which replaced Legislative Decree No. 490 of 8 August 1994), provides that the Ministry of the Interior run a communications and certification system to counter corruption, which is based on the acquisition of specific information aimed at ascertaining the possible existence of a prohibition to contract with general government entities.

The information above is independent of findings in criminal cases, of one or more offences related to conspiracy with the mafia and does not require proof of facts of the crime or of actual infiltration, but rather the attempt of infiltration with the purpose of influencing the choices of the undertaking, even if this has not actually been achieved. Among the various cases covered, governments must acquire such information before stipulating public

works contracts worth more than the EU threshold value (now standing at €5.15 million) and before approving subcontracts for public works in excess of €154,937.06. If in the information acquired there are elements related to attempts at mafia infiltration into the companies, the authorities may not enter into, approve or authorize contracts or subcontracts, or authorize, release or otherwise assent to concessions and the award of public money.

3. Regulation at local level

The regulatory framework at national level is supplemented by the laws and regulations laid down by the Regional, Provincial and Municipal Authorities (“Regions”, “Provinces” and “Municipalities”). In fact, all the Regions, with the exception of Emilia-Romagna and Lazio, and the Autonomous Provinces have adopted ad hoc legislation, often referring to public works within the territory of the Region or Autonomous Province,²⁰ in several cases with numerous subsequent changes. In some cases, the Provinces and Municipalities have adopted ad hoc administrative resolutions, different from the national and regional laws. In what follows we provide a brief discussion of the choices made, on the one hand, by the Regions and Autonomous Provinces and, on the other, by a representative sample of Provinces and Municipalities. For editorial reasons related to the length of the paper, the numerous references to the legislative provisions of the Regions and Autonomous Provinces have been reported in the Web Appendix available on the web site <http://people.bu.edu/fdc/decarolis-research.htm>.

3.1. Regions and Autonomous Provinces

The analysis of the regional and provincial laws (surveyed for the 2000–2010 period, however reporting subsequent changes) was conducted in relation to each of the four profiles taken into account for the national framework (procedures and award criteria; requirements for qualification of enterprises; guarantees; measures to combat corruption and organized crime), indicating some of the main differences with respect to national legislation, on many occasions censored by the Constitutional Court (see Table 1 at the end of the paragraph). Overall, both before and after the reform of Title V of the Constitution, legislation adopted by the Special Statute Regions and Autonomous Provinces of Trento and Bolzano has been particularly pervasive. It differs from the national legislation in a number of profiles, while – with a few exceptions (notably that of Veneto) – the rules dictated by Ordinary Statute Regions are much more in line with the national legislation.²¹

(i) *Award procedures and criteria.* Regional legislation modified these in a very significant way in comparison with national

²⁰ With the exception of public works contracts related to the powers of the State, which are subject only to national legislation. It should be noted that in the Marche, Molise, Basilicata and Calabria the regional legislation is applied to public works contracts with (total or partial) regional funding.

²¹ This is consistent with the constitutional division of competences before the reform of Title V in 2001, which bound the Ordinary Statute Regions to the limits of the fundamental principles established by the laws of the State, while the competences of the Special Statute Regions and the Autonomous Provinces of Trento and Bolzano were established by their Statutes. Both the Ordinary Statute Regions and the Special Statute Regions and Autonomous Provinces were bound by the constraints of European law. This system allows significant scope (for the Special Statute Regions and Autonomous Provinces) in public works contracts below the EU threshold (which are only subject to general European Treaties principles of transparency, equal treatment, fairness and competition). In some cases, regional legislation is dated and – therefore – to be considered abrogated by Article 4 of the PPC (Ambrosi, 2007). In the light of these considerations, in this paper we focus on the laws adopted by the Special Statute Regions, the Autonomous Provinces of Trento and Bolzano and only some of the Ordinary Statute Regions (Veneto, Umbria, Campania, Puglia and Calabria) which, on the one hand, significantly differ from the National legislation; and on the other, have been issued or amended after the adoption of the PPC.

¹⁶ See Article 75 of the PPC.

¹⁷ See Article 113 of the PPC. The surety varies according to the discount offered: starting from a minimum of 10% of the sum stated in the contract, rising proportionally with the discount offered, up to 100% for discounts of 60% or more (Giorgiantonio, 2010).

¹⁸ The substitution becomes effective when a rescission of the contract occurs and in cases of bankruptcy, compulsory liquidation or composition with creditors that prevent the project from being executed correctly (Giorgiantonio, 2011).

¹⁹ The measure defines a labour “subcontract” as any contract for activities, wherever performed, requiring the employment of labour [...] that in itself is worth more than 2% of the total value of the contracted services or over €100,000 and when the incidence of the cost of labour and personnel is over 50% of the contract.

Table 1
Main laws enacted by Regions and Autonomous Provinces and declarations of unconstitutionality.

Regions and Autonomous Provinces	Main enacted laws (No.)	Declarations of unconstitutionality (No.)	After how many months (average)
Valle d'Aosta	3	2	19
Trento	4	1	19
Bolzano	2	0	
Friuli Venezia Giulia	3	0	
Veneto	3	1	13
Umbria	2	0	
Campania	3	1	16
Puglia	2	0	
Calabria	1	0	
Sicily	6	0	
Sardinia	3	3	49
All Regions and Autonomous Provinces	32	8	23

Notes: Bolzano and Sicily, starting from October 2009 and August 2010 respectively, have established a substantial reference to national legislation.

legislation. For this reason, the Constitutional Court has intervened several times to censor local legislation.

Firstly, local legislation seems to prefer the automatic exclusion of abnormal tenders for public works contracts whose value is below the EU threshold, awarded in accordance with the criterion of the lowest price, albeit with many variations especially as regards methods to compute the threshold of “presumed anomaly” (see section 4, Table 4). In fact, this was the option adopted by the Autonomous Province of Bolzano and by Sicily, until October 2009 and August 2010 respectively, since when they have established a substantial reference to national legislation. This is the option still maintained by Valle d'Aosta, Trento and Friuli Venezia Giulia, in which the automatic exclusion of abnormal tenders for public works contracts whose value is below the EU threshold, awarded in accordance with the criterion of the lowest price, is mandatory. Sardinia had also made provision for the automatic exclusion of abnormal tenders for public works contracts whose value is below the EU threshold, awarded in accordance with the criterion of the lowest price, but only on a voluntary basis. However, recently (June 2011), the Constitutional Court declared the unconstitutionality of the system adopted by Sardinia, stating the applicability of the PPC.

Several Special Statute Regions and Autonomous Provinces introduced the possibility of choosing between the lowest price or the economically most advantageous offer criteria for contracting authorities before national legislation (PPC) provided for this, i.e. Bolzano (June 1998), Valle d'Aosta (September 2005) and Friuli Venezia Giulia (June 2002): starting from 2009 the latter provided for preference to be given to the economically most advantageous offer criterion. Trento is an exception, given that – until April 2011 – the local legislation provided for the use of the restricted procedure and the lowest price criterion for awarding public works contracts whose value is below the EU threshold.

With regard to awarding procedures for public works contracts whose value is below the EU threshold, in comparison with national legislation, Trento established the preference for restricted procedures and a greater use of negotiated procedures (until April 2011 when the Constitutional Court declared the unconstitutionality of such rules); Valle d'Aosta extended the scope of restricted procedures; Sardinia extended the scope of the simplified restricted procedure in 2007 and until the declaration of December 2008 on its unconstitutionality. On the contrary, Sicily (until July 2011, when the local legislation established the general application of the PPC, except where otherwise expressly provided) established the open procedure as its standard award procedure. Sicily also set more limits for the use of the negotiated procedure.

The legislation of the Ordinary Statute Regions is more in line with national laws. The case of Veneto is an exception, given that since November 2003 the local legislation provided for the possibility to choose between the lowest price criterion or the economically

most advantageous offer criterion for contracting authorities and since August 2007 it provided for the congruity check in discussion with the interested parties as the mandatory method for the assessment of abnormal tenders for awarding public works contracts below the EU threshold,²² setting up provincial committees to support contracting authorities that apply for their assistance. The mandatory use of this method was declared unconstitutional in August 2008.

In contrast, some southern Regions (Campania until 2009, and Puglia) provide for the mandatory use of automatic exclusion of abnormally low tenders where not prohibited by national legislation.

(ii) *Qualification requirements for firms.* These were often modified in a very significant way by regional legislation in comparison with the national system, in order to favour local firms. For this reason, the Constitutional Court has declared the unconstitutionality of local legislation several times, because of the contrast with the principles concerning the protection of competition and equal treatment.

For the award of public works contracts whose value is below the EU threshold, Valle d'Aosta set up a regional register for firms and provided that entry in the register was a mandatory requirement for participation in award procedures. These provisions were declared unconstitutional in 2001, but the register was only finally repealed in 2005. After this, for public works contracts to be awarded through simplified restricted procedures, Valle d'Aosta introduced other measures to favour firms located within the region. In particular, it introduced “better suitability of localization” among the selection criteria, which was declared unconstitutional in 2006. Until the changes introduced in April 2011 because of the sentence of the Constitutional Court of 12 February 2010, No. 45, identical provisions were contained in the local legislation of Trento, which provided for the “better suitability of localization” to be included in the selection criteria for candidates to be invited to restricted procedures.

Until April 2003, Friuli Venezia Giulia allowed contracting authorities to establish selection criteria to give priority to firms located in the Region and to award public works contracts in accordance with the economically most advantageous offer criterion. Starting from November 2006, for the award of public works contracts whose value was below the EU threshold through restricted procedures, Friuli Venezia Giulia introduced another requirement for the selection of firms to invite to procedures, different from

²² It should be noted that in 2008 (after the sentence of the Constitutional Court of 23 November 2007, No. 401) Veneto established the application of PPC rules (see the resolution of 11 March 2008, *Indirizzi operativi per l'applicazione della L.R. 27/2003 a seguito della sentenza della Corte costituzionale n. 401/2007*).

the national criteria—“organizational and dimensional suitability”, also based on the parameter of the number of employees of the firm or group of firms registered with the National Institute for Social Security located in Friuli Venezia Giulia, when the firm or the group of firms submitted the request for invitation. In 2002, Sardinia set up a regional register for firms and provided that entry in the register was a mandatory requirement for participation in award procedures. These provisions were amended in 2003 eliminating entry in the register as a mandatory requirement and they were declared unconstitutional in late 2011, because they damaged the exclusive legislative powers of the State in the field of protection of competition.

With reference to the Ordinary Statute Regions, we report the case of Veneto which, until August 2007, for the award of public works contracts whose value was below the EU threshold through restricted or simplified restricted procedures, provided that location within the region was among the criteria for the selection of firms to be invited. They also considered – in the case of restricted procedures – where the firms were located in relation to the where the public works were to be executed and, in the case of simplified restricted procedures, they took into consideration whether firms had their registered office in the region.

(iii) *The system of guarantees.* With regard to the system of guarantees, Regions and Autonomous Provinces generally provided more stringent safeguards than those found in national legislation. Until October 2009, Bolzano stated that the constitution of sureties for the general government entity the bid submission phase was equal to 5% of the reserve price indicated in the call for tender or invitation (not 2%, as under national legislation). Veneto provided that for public works contracts of regional interest whose value was equal to or exceeding the EU threshold, sureties for the entity at the award of contract started from a minimum of 20% of the sum stated in the bid (not 10%, as required by national legislation).²³ Furthermore, Trento established the constitution of performance bonds for public works contracts whose value is more than €50 million (not €75 million, as provided under the national legislation).

Sicily and Sardinia are exceptions, because in some cases they provided less stringent rules on guarantees. In fact, in the bid submission phase, until July 2011, Sicilian regional legislation provided that: (i) for public works contracts whose value was below the EU threshold and more than €150,000 euro, sureties for the government entity were reduced from 2 to 0.5% of the reserve price indicated in the call for tender; (ii) for public works contracts whose value was up to €150,000 no securities were required. In 2007 and until the declaration of unconstitutionality in August 2008, Sardinian regional law provided that, in the bid submission phase, sureties for the government entity were equal to 1% (not to 2%) of the reserve price indicated in the call for tender or invitation to bid.

(iv) *Measures to counter corruption and criminality.* In this area the gap between the choices of the Regions in northern Italy and those in the south of the country is particularly large. In fact, Regions and Autonomous Provinces located in northern Italy have often opted for an extension of the limits for the use of subcontracting: since 2005, Valle d'Aosta has provided that – in the presence of certain requirements – subcontracts whose value is less than €15,000 are not subject to prior authorization from the contracting authorities; until October 2009, Bolzano established that the use of subcontracting was admissible up to a 40% of the total contract value, and not 30% as required by national legislation;

²³ It should be noted that, after the sentence of the Constitutional Court of 23 November 2007, No. 401, in Veneto contracting authorities have to apply the PPC rules: see the Regional Resolution of 11 March 2008, *Indirizzi operativi per l'applicazione della L.R. 27/2003 a seguito della sentenza della Corte costituzionale No. 401/2007*.

Veneto provided that the use of subcontracting was admissible up to 40% of the total contract value.²⁴

In contrast the southern Regions, in addition to confirming the limits laid down by national legislation on subcontracting, introduced additional measures to counter corruption and criminality. The case of Sicily is particularly relevant, given that specific legal memoranda (such as that dedicated to Carlo Alberto Dalla Chiesa on 12 July 2005) were signed and an anti-corruption and anti-mafia code was drafted for general government entities. Campania also adopted additional safeguards, which were included in a regional law in 2007, according to which the Region can prepare criminal impact assessments to signal the risk of criminal interference in the award procedures. In 2007, Calabria established a centralized adjudication authority with the task of ensuring compliance with national and local regulations, especially for the verification of the regularity and transparency of the award procedures.

3.2. The sample of Provinces and Municipalities

The examination of the provinces and municipalities²⁵ was limited to some of the largest contracting authorities, located in different areas of the country: in particular, Turin, Milan, Aosta, Rome, Naples, Bari and Palermo, taking them into account as both Provinces and Municipalities.

Overall, both Provinces and Municipalities tend to replicate the situation at the regional level, applying the regional rather than national legislation if there is a difference (as in the case of Aosta and Palermo), or applying national legislation, in the absence of any regional laws (as in the case of Milan and Rome). Naples and Bari differ given that, despite ad hoc regional rules for certain cases, they apply national legislation. However, the Province and Municipality of Turin are very significant exceptions:²⁶ starting from 2003, they opt for the congruity check in discussion with the interested parties as the mandatory method for the assessment of abnormal tenders for awarding public works contracts (also those below the EU threshold), prohibiting the method of automatic exclusion. In fact, the automatic exclusion of abnormally low tenders for public works contracts whose value was below the EU threshold (then mandatory) had produced some situations (significant increases of bids with a simultaneous large reduction of the average discounts offered) which raised doubts over possible collusive agreements between the firms that participated in the award procedures. Recently, however, the Province and the Municipality of Turin (respectively, in March 2010 and October 2012) agreed to return, on an experimental basis and for public works contracts of small value, to the automatic exclusion of abnormally low tenders.²⁷

²⁴ It should be noted that, after the sentence of the Constitutional Court of 23 November 2007, No. 401, in Veneto contracting authorities have to apply the PPC rules: see the Regional Resolution of 11 March 2008, *Indirizzi operativi per l'applicazione della L.R. 27/2003 a seguito della sentenza della Corte costituzionale No. 401/2007*.

²⁵ Which can only enact administrative resolutions, not laws. Such resolutions should never be in contrast with national or regional laws.

²⁶ See the resolutions, respectively, of the Municipality of Turin No. 00530/003 of 28 January 2003 and of the Province of Turin No. 243-71818 of 25 March 2003.

²⁷ More specifically, starting from March 2010, the Province of Turin decided to return to the automatic exclusion of abnormally low tenders for public works contracts whose value is equal to or less than €500,000, except if different methods are justified by the specifics of the public work to be carried out. Besides, the Province of Turin provided the preference for the economically most advantageous offer criterion (see Resolution 293-12088 of 30 March 2010). More recently (October 2012), the Municipality of Turin also decided to return, on an experimental basis for the duration of one year, to the automatic exclusion of abnormally low tenders for public works contracts whose value is equal to or less than €750,000 (see Resolution 04 964/029 of 2 October 2012).

In summary, the Autonomous Provinces and almost all Regions have ad hoc legislation for public works. The legislation adopted by the Special Statute Regions and Autonomous Provinces of Trento and Bolzano has been particularly pervasive. It differs from national legislation in several aspects, especially with regard to public works contracts whose value is below the UE threshold, often in an anti-competitive way, as demonstrated by numerous sentences of the Constitutional Court; while – with a few exceptions (notably that of Veneto) – the rules dictated by Ordinary Statute Regions are much more in line with national legislation. With regard to the four aspects that were analyzed, there is a tendency: (i) to expand the possibilities to use the automatic exclusion of abnormally low tenders, with many variations especially as regards methods to compute the threshold of “presumed anomaly”, and – especially in northern Italy – to prefer the use of restricted procedures; (ii) again in northern Italy, to introduce additional selection criteria for participation in award procedures, aimed at favouring local firms; (iii) to strengthen the system of guarantees in the northern Regions (while it was weakened in Sardinia and Sicily); and (iv) to provide additional measures to counter corruption and criminality in southern Italy. With reference to the Provinces and Municipalities under consideration, although there is a general tendency to replicate the situation at the regional level, there are notable exceptions (such as the Municipality and the Province of Turin), which introduced specific rules, in particular aimed at eliminating the possibility of using the automatic exclusion of abnormally low tenders, except for public works contracts of low value.

4. Economic theory overview

To complement the legal analysis of the previous two sections, this section presents an overview of the economic theories most relevant to assess the procurement rules described earlier. A general premise regarding fragmentation in the public procurement system consists in the *trade-off* this generates between the ability of the system to respond to the specific needs of the territory and its capacity to produce benefits, at the aggregate level, in terms of reductions in public expenditure and an effective allocation of resources.

In particular, given the dissimilarity of constrictions affecting the action of contracting authorities, it is clear that a local regulation may help the contracting authorities to respond better to the structural factors of their own geographical area. For example, while in some regions of the south the presence of criminal associations makes the risk of corruption the main constraint to the effective functioning of the procurement system, in some regions of the centre and the north the high levels of association between firms would suggest that here the main risk is collusion between them. Economic theory illustrates how, in the face of these two types of risk, the optimal structure of the public procurement system should be completely different. However, local regulations can have heavily distorting effects on competition in the award of public contracts and hence come to increase the costs for contracting authorities and cause a deterioration in the allocation of resources.

Balancing these elements of the trade-off is a complex task, but, as illustrated in Section 2.2 above, the choice of the Italian parliament (made necessary also by EU Law requirements) has been quite clear: to grant Regions and other local authorities a certain flexibility to adapt to the needs of their local territories, but making sure this does not translate into a limitation of competition. The preceding legal analysis has shown that certain local reforms are potentially prejudicial to fair competition. Below we shall try to analyze from an economic point of view some of these reforms. The four profiles considered in examining the regulatory framework are: award procedures and criteria; qualification requirements for

firms; guarantees; measures to counter corruption. For the award procedures and the qualification requirements we will be able to supplement this theoretical overview with an empirical analysis that we present in the following section.

(i) *Award procedures and criteria.* Potentially the most significant aspect in the award of contracts regards what the economic literature calls “auction formats”, corresponding – in the Italian system – to a combination of three parts: an award procedure, an award criterion and an (automatic or non-automatic) exclusion procedure for abnormal tenders. More particularly, it is possible to reduce the prescribed procedures and criteria to four “auction formats”: (i) *first price auctions*, FP; (ii) *average bid auctions*, AB; (iii) *scoring rule auctions*, SR; (iv) *negotiations*, N (see Table 2).²⁸

When the only objective of the administration is to identify the firm willing to offer the lowest price²⁹ and there are two or more firms capable of carrying out the job, the optimal mechanism for adjudicating the contract is a simple open first price auction – FP (Myerson, 1981; Laffont and Tirole, 1993). Indeed, in these circumstances, the aforementioned mechanism makes it possible to overcome any informational asymmetries existing between the PA and the bidders, as competition pushes the latter to reveal – at least partially – their production costs. Furthermore, this method allows the bidders with the lowest costs to have the best chances of winning (thanks to the allocative efficiency of the auction mechanism). However, in practice, the action of the administration is influenced by several factors that require going beyond this basic result. It has to take into account: (i) the risk of failure to complete projects; (ii) the risk of collusion between firms; (iii) the risk of corruption; (iv) the lack of design quality; (v) the pursuit of multiple objectives on behalf of the administration.³⁰

In general, when there are further constrictions as mentioned above, it is no longer correct to say that FP auctions are the optimal format, because other formats, including those present in the Italian system, may be preferable. On this subject, Table 3 shows in brief what the economic theory suggests about the performance of the four Italian auction formats: (a) first price auctions, optimal when an administration needs to simply minimize costs, become problematic when other limitations to administrative action are present and when the administration is pursuing multiple objectives; (b) there is no format capable of improving first price auctions with respect to all the risks; (b1) average bid auctions are effective in relation to the risks of failure to complete projects and the risks of corruption, while they are not effective in relation to the risk of collusion and to the pursuit of multiple objectives by

²⁸ In more detail, (i) FP auctions consist of open and restricted procedures adjudicated with the criterion of the lowest price without the automatic exclusion of abnormal tenders; (ii) AB auctions consist of open and restricted procedures adjudicated with the criterion of the lowest price and the automatic exclusion of abnormal tenders according to the “averaged mean” method; (iii) SR auctions consist of open and restricted procedures adjudicated according to the criterion of the most economically advantageous tender; (iv) negotiations consist of negotiated procedures and piecework contracts. From the point of view of economic theory, competitive dialogue (which has been in place in Italy since 8 June 2011) can be considered, given its characteristics, as a particular type of negotiated procedure. On the subject of why the Italian system is structured according to this quadripartition and on the associated costs and benefits (Decarolis et al., 2010).

²⁹ This survey focuses, as already stated, on traditional procedures for public procurement. It does not, therefore, analyze in-house contracts or the procedures for commissioning building and management concession contracts, which are examined in Giogiantonio & Giovanniello (2009) and Antellini Russo & Iossa (2008).

³⁰ For example, the aim of minimizing costs and completion times while at the same time maximizing the quality of the job. It is important in any case to stress how the factors listed are by no means exhaustive of all those that can possibly condition general government action (consider, for example, the levels of professionalism of the adjudicating authorities and the limitations arising from programming interventions). However, empirical confirmation is available for these factors and they represent, in any case, the most significant and best capable of affecting the choice of private contractors (Dimitri et al., 2006).

Table 2
Italian auction formats.

Award procedures	Auction (open procedure + restricted procedure + simplified restricted procedure)			Negotiation (negotiated procedure + piecework contracts)
Award criterion and exclusion method for anomalous offers	First price (without automatic exclusion)	First price (with automatic exclusion)	Economically most advantageous offer (without automatic exclusion)	Economically most advantageous offer and first price (with and without automatic exclusion)
Format	FP	AB	SR	N

Source: Decarolis et al. (2010).

Table 3
Theoretical characteristics of the 4 formats.

	FP	AB	SR	N
Baseline case: execution of a public work through external contractors with the intent to minimize costs and in absence of any constraints	+	–	–	–
Constraints to the administration actions:				
Collusion	–	–	+	+
Project Limits	–	.	+	+
Breach of Contract	–	+	+	+
Corruption	–	+	–	–
Multiple Goals: for instance, simultaneously limit costs, reduce execution times and achieve high quality	–	–	+	+

Source: Decarolis et al. (2010).

The “+” sign indicates that the auction format has positive properties, while the “–” sign represents negative properties. A “.” indicates that no certain results exist.

the administration (with regard to the lack of design quality, no solid results exist in the literature); (b2) scoring rule auctions are effective to counter the risks of collusion, of failure to complete projects and the lack of design quality, but ineffective in countering corruption (b3) negotiations are effective in containing the risks of collusion and of failure to complete projects and in overcoming any lack in design quality, but it is insufficient when it comes to corruption risks and is inferior to SR auctions when it comes to the need for the administration to pursue multiple objectives.

As illustrated above, local provisions have often had a significant effect in determining which of the formats allowed by national legislation should be used at the local level and in creating entirely new auction formats. An example is the obligation imposed by the regional governments of Campania and Puglia to resort to the automatic exclusion of abnormal tenders (i.e. the AB auction), where not forbidden by national legislation. The most macroscopic example, however, is the creation, by the regional governments of Valle d’Aosta, Friuli Venezia Giulia, Sicily and the government of the autonomous provinces of Trento and Bolzano, of variants to the AB auction, not conforming to national rules. Table 4 summarizes these reforms.

Though developed to curb the risk of excessive discounts in FP auctions, the AB format is one of the main problems of the Italian system (Decarolis et al., 2010). It is not surprising, therefore, that local governments have tried in various ways to revise the system. The theoretical analysis of the equilibrium properties of the AB auction format reveals that if firms really competed with each other, the national criterion would always generate auctions where all firms offered a discount of 0% on the starting price. With no need to present this result formally (Decarolis, 2009), it is easy to understand what this means: the AB format implies the certainty that at least 10% of the highest discounts is eliminated. Hence, a lower discount is advantageous both in terms of the increase in profits (in the event of victory) and in terms of a reduction in the probabilities of being excluded. A situation is therefore produced by which we only achieve an equilibrium when all firms offer a discount of 0%. However, it is practically impossible for such a scenario

to occur, considering that this produces strong incentives for the creation of cartels among firms, with the aim of steering the award threshold by manipulating the discount average that determines the winner.³¹

The perverse features of the AB format are well illustrated by the case of its reform in Sicily in 2005. The changes described in Table 4 are only apparently a matter of detail: the lowest discount (or that equal to the abnormality threshold) wins, not strictly the discount below this threshold. From a theoretical point of view this radically changes the possible equilibria of the auction, allowing the presence of multiple equilibria where all firms offer the same identical discount, which has nothing to do with their costs. Fig. 1, referring to a random sample of auctions that took place after the 2005 reform, clearly shows – with reference to the winning discounts – the complete absence of any link between the firms’ costs and their offers. Indeed, the graph on the left shows how nearly all the contracts were awarded at an identical price and at a discount of 7.3%. This winning discount came about with an extremely high number of bids, even over 400, as the graph on the right shows.

It is clear how the situation the two graphs describe has nothing to do with what is generally referred to as an auction, but seems instead a sort of lottery. And the Sicilian case is emblematic of this, because the formidable number of identical winning discounts often leads to the contract being awarded after a random draw between the various firms who presented the same discount. In a region like Sicily where, as we have seen, the regional legislator was particularly concerned about attempting to limit corruption risks, a random lottery undoubtedly has its advantages. However, this mechanism inevitably implies an enormous waste of resources: an early survey of auctions held after the scrapping of automatic exclusion of abnormal tenders after 2010 reveals increases in the winning discounts that are on average 20% of the value of the contract.

³¹ These theoretical results find confirmation in a recent empirical analysis (Conley & Decarolis, 2011), the results of which are described below. See also AGCM (1992).

Table 4
Fundamental traits of the AB format.

	Validity	AB auction rules
National Criterion	Since 1998	The winner is the firm offering the highest discount among those lower than A2, where A2 is the average between all the discounts that remain after excluding from the pool of bids 10% of the highest discounts and those equal or lower than A1, where A1 is the mean of all the discounts that remain after excluding the top and bottom 10% of all discounts.
Valle d'Aosta Region	Since 2005	Calculate A1 and A2 as for the national criterion. Then, the winner is the firm offering the discount closest to the mean between A1 and a randomly chosen number (among the 9 numbers partitioning in equal subintervals the distance between A2 and 10% of bids).
Friuli Venezia Giulia Region	Since 2002	The winner is the firm offering the discount closest (from below) to the mean of all the discounts remaining after excluding the top and bottom 10% of all discounts received.
Trento Province	Since 1996	The winner is the firm offering the discount closest (from below) to the mean of all discounts. When there are discounts above or below this mean by at least 10 points, the mean is recalculated excluding these discounts.
Bolzano Province	Since 1998	The winner is the firm offering the discount closest (from below) to the mean of all the discounts, increased by 7 points.
	Since 2009	Reintroduction of the national criterion.
Sicily Region	Since 2005	The winner is the firm offering the discount equal (or closest from below) to a value A3 calculated as follows: draw an integer between 11 and 40, this number will be the percentage of the bottom discount to exclude, while the difference between 50 and this number is the percentage of top offers to exclude. Calculate the mean of the remaining offers and then, if the integer previously drawn is between 11 and 24, add the standard deviation of bids and call this A3. If instead the integer was between 26 and 40, subtract from the mean the standard deviation and call this A3. If the integer is equal to 25, then A3 is equal to the mean. This bids elimination process occurs only with at least 5 bids.
	Since 2010	Reintroduction of the national criterion.
Sardinia Region	Since 2007	Automatic exclusion occurs if at least 5 (not 10) offers are placed.
	Since 2011	Reintroduction of the national criterion.
Campania, Puglia, Calabria Regions	Various	Mandatory to use AB whenever this format is admitted under national law.
Turin Municipality and Province, Veneto Region	Various	It is forbidden to use any form of automatic exclusion of bids.

These considerations lead us on the one hand to appreciate the reforms introduced for the first time by the Municipality of Turin in 2003 directed at eliminating AB auctions, but on the other they also suggest a certain amount of caution: because this elimination – in order for it to produce effective improvements–needs to be backed up by a strengthening both of safeguards to contain the risks of unfulfilled contracts and of measures to counter corruption (Decarolis et al., 2010). In the same way, the choices made by Campania and other southern Regions, where the risk of criminal infiltration is particularly high, aimed at imposing the adoption of AB auctions since this is a mechanism far less vulnerable to corruption compared with FP auctions. Obviously this does not take away the fact that AB auctions waste large amounts of resources, quite apart from the fact that it is not a

good idea to leave it to the auction format to counter corruption risks.

In conclusion, a negative assessment can and must be given only to those reforms that have introduced variations to AB auctions in contrast with national rules and without tackling the fundamental problems this format presents. At the level of economic theory, with the exception of the legislative option adopted by the Autonomous Province of Bolzano between 1998 and 2009, all the various AB formats introduced at the local level share with the national criterion the characteristic of generating an equilibrium in which all firms offer a 0% discount. These changes, therefore, are unable to modify the fundamental problem of the national system, i.e. it has become a sort of lottery, in which offers are disjointed from real production costs and it is a system that is highly vulnerable to risks

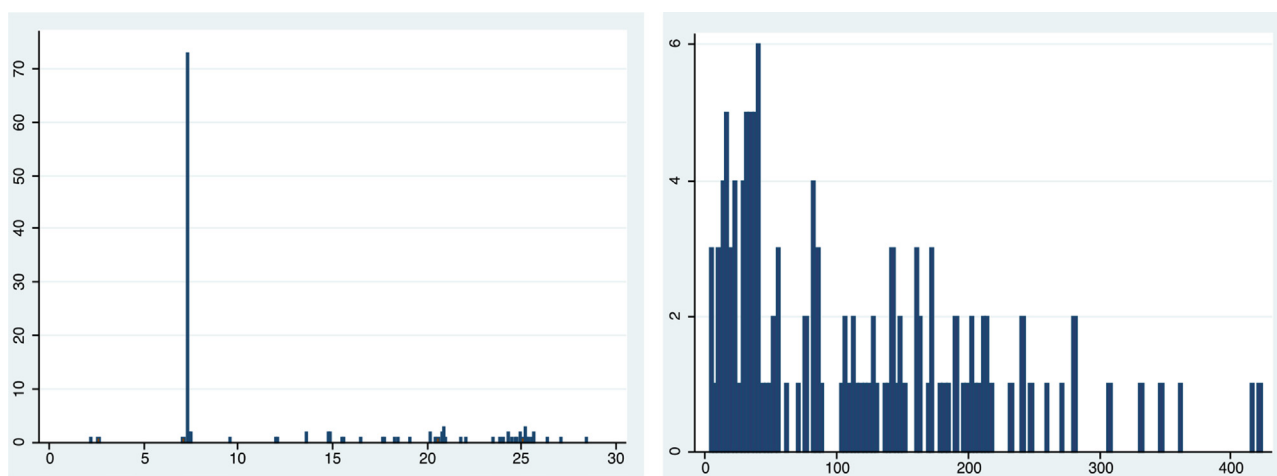


Fig. 1. Winning discount (left) and number of bids (right) in sicilian auctions for roadworks. Random sample of 131 auctions for roadworks contracts (i.e. work type: OG3) awarded in Sicily between 2005 and 2010. Both histograms report on the vertical axis the number of auctions (out of the total of 131). The histogram on the left reports on the horizontal axis the value of the winning discount, note that more than half of all auctions are awarded at a discount of 7.3%. The histogram on the right reports on the horizontal axis the number of bids submitted in each of the 131 auctions.

of collusion. In view of these considerations, it seems reasonable to explain these changes as a tool for closing the market to enterprises from other regions, making it more difficult for them to adapt to an adjudication mechanism that differs from the national standard.

(ii) *Qualification requirements for firms.* The aim of limiting the risk that the winning firm may fail to carry out what it promised in the tender phase not only led to the use of the AB format, but also to the creation of the qualification system described earlier. This system ensures that only firms that clear certain criteria in terms of financial, technical and lack of mafia connections can participate in procurement auctions. However, it is clear that such a system produces a trade-off between the level of competition and the quality of firms.

Though some of the reforms carried out at the local level may be useful to identify selective parameters for firms adhering to the specificities of the local territory (stricter measures against criminal infiltration, for example), most of the reforms illustrated in the previous section do not seem to be motivated by such aims, but rather by the attempt to reduce competition in favour of local firms. In particular, both the introduction of regional registers (for example in Valle d'Aosta), and of the requirement for a connection with the territory (like the obligation of having an office in the region which was imposed by Friuli Venezia Giulia), do not guarantee greater reliability on the part of firms, but merely reduce potential competition. This is clearly exacerbated by the preference of some Regions for restricted procedures, which makes it possible to further reduce the number of potential bidders. Therefore, these local reforms are likely to translate into a worse performance of the auctions, in terms of higher costs for the contracting authority.

(iii) *The system of guarantees.* As previously illustrated, carrying out public works – considering the uncertainty of costs due to the length of the works – presents a potential risk that the winning firm will not wish to or cannot complete the job (Engel et al., 2006; Zheng, 2001). From this point of view, local reforms that have increased the amount of surety guarantees required of bidders (like those introduced by the Provinces of Trento and Bolzano and by the Veneto Region), should be positively assessed. However, they do pose the risk of causing an excessive reduction of competition in favour of a limited number of large firms capable of keeping considerable amounts of capital locked down both in the selection phase and while carrying out the work.³² Considering these problems, the economic theory suggests – as an alternative to surety guarantees – using tools based on the model of the U.S. performance bond. This type of instrument, which in Italy is known as *garanzia globale di esecuzione*, basically constitutes an insurance guarantee on the execution of the work. Yet another possible hypothesis is the introduction, in the selection procedure, of a discretionary assessment, *ex ante* or *ex post*, of the actual reliability of the bids.

The abovementioned local reforms do not seem to have taken either the path of the performance bond,³³ nor that of a more thorough assessment of firms. Indeed, the modifications concerning the system of guarantees for firms seem incapable of selecting more reliable firms. The only exception is the Veneto, which – by eliminating the AB format in favour of FP – has established provincial committees for the assessment of the congruity of bids, to support

³² From this point of view there seems to be no valid foundation for the choice of Sicily and Sardinia to reduce guarantees in view of the very high number of participants in auctions (see next section).

³³ With the exception, for some aspects, of the Autonomous Province of Trento, which has extended the field of application of the global execution guarantee. However, as already stressed, the practical use of this tool has been deferred until specific regulations are implemented.

the contracting authorities that apply for assistance.³⁴ This move appears perfectly in line with what the economic theory suggests, i.e. the FP auction dominates over the AB, but only if the firms taking part in the tender are reliable; and the expense of reliability assessment is well suited to a centralized system that can benefit from the opportunity of partitioning the high fixed costs associated with the presence of a competent technical and legal office over a large number of auctions.

(iv) *Measures to counter corruption and criminality.* The risk of corruption is one of the crucial aspects of public procurement, insofar as the agents of the contracting authorities are not purchasing for themselves, but for a public administration. It is not therefore surprising that some local administrations have felt the need to adapt national regulations to the incidence of corruption risks in their specific geographical area. Of the previously illustrated local reforms, several can be ascribed to the need to counter corruption: of these, the most widely studied include the margins within which recourse to a negotiated procedure is allowed, the criteria to consider in scoring rule auctions and limits to subcontracting.

With regard to the risk of corruption, the economic literature indicates a trade-off in the desirability of the various auction formats in the presence of collusion and corruption risks. Indeed, considering that the risk of corruption is reduced when: (i) the administration has limited discretionary power, (ii) there are high levels of control on both agents of the administration and on firms and (iii) adequate levels of transparency are guaranteed (Lengwiler and Wolfstetter, 2006). The four Italian auction formats differ with respect to the risks generated by corruption and collusion. The AB auction is potentially an excellent defence against the risk of corruption, because – by awarding a contract through a sort of lottery – it makes it almost impossible for a corrupt agent of an administration to favour a particular firm. On the contrary, in an FP auction, for a firm it may be enough to corrupt the administration's director of works alone: indeed, the latter could give a particular firm near certainty of success, allowing it to offer a very low price and promising to renegotiate it in the subsequent phase of fulfilment of the contract so as to assure a good profit for the firm in question. The biggest risks, however, lurk behind the N and SR formats. In both cases, attempts at corruption can concern both the award committee, which – taking advantage of the enhanced discretionary power these formats offer – could choose its favoured building contractor, and the director of works, who could assure the favoured firm the possibility of submitting conditions of “unbeatable” costs and quality, while also assuring it that it will not be obliged to fulfil its promises.³⁵ This theoretical reconstruction seems in line with the choices made by some Regions in Northern Italy (for example, Friuli Venezia Giulia or Valle d'Aosta) – notoriously less exposed to corruption and criminal infiltration risks compared to those of the South – aimed at extending the possibility of recurring to SR formats. By contrast, as already stressed, the main incidence of such risks seems to lie in the particular rigidity of the selection mechanisms in Southern Regions and in the additional defences they have adopted.

As regards subcontracting, the risk is that subcontractors may be used by the main contractor as an instrument to pay a corrupt general government agent (when choosing subcontractors the main contractor could favour subjects tied in various possible ways to

³⁴ As already stressed, the actual establishment of these committees in charge of supporting the contracting authorities has, however, been deferred until a relevant regional government measure is adopted.

³⁵ These two formats present a further element of risk, since attempts at corruption could come about towards general government officers in charge of establishing the criteria (and corresponding weights) on which the firms' bids will then be judged (Laffont and Tirole, 1993; Tran, 2009).

the agent); not to mention that – though mafia infiltration is not negligible even in the tender phase – it is above all in the execution phase, when the contractor has to involve other firms (suppliers of material, service providers and so on) to fulfil the contract, that the risk of infiltration becomes more concrete. These theoretical considerations could, at least partially, explain the extension of opportunities for subcontracting in Northern Italy and not in the South, which is exposed – as already mentioned – to a particularly high incidence of corruption risks.

5. Empirical analysis

This section describes the data and the empirical analysis we use to provide some empirical backing to the previous considerations on the reforms carried out by regional governments and local authorities. Given the type of data available, this section is more narrowly focused than the previous ones along two dimensions. The first dimension concerns the outcome measures over which we assess the impact of the local reforms. Our analysis focuses on three basic aspects of the procurement process that are both economically relevant and for which we have data: (i) the winning discount; (ii) the number of offers received; (iii) the probability that the winning firm is from the same region of the PA. The second dimension concerns the set of local reforms analyzed. Due to gaps in the available data and to the overlapping of several reforms in the same Region at the same time, it has not been possible to analyze the specific effect of the described changes in the field of surety guarantees and measures to counter corruption. Therefore, we have concentrated mostly on the remaining two categories to test the role of auction formats and the impact that the change of qualification criteria, over and above national rules, has had on auction outcomes.

5.1. Data

As regards the data, we use a previously constructed data set³⁶ containing information on all contracts awarded by all Italian administrations between 2000 and early 2008 and reported to the Authority for the Supervision of Public Contracts (AVCP).³⁷ Since we focus exclusively on execution-only contracts (not management contracts) for works assigned to external contractors and since the AVCP data is incomplete in parts, the present work only makes use of information about approximately 60,000 contracts awarded by local administrations.

The first feature of the data that emerges is that regional governments and local authorities assign a large share, 54%, of all the contracts reported. This confirms the relevance of an in-depth analysis of the rules under which regional governments and local authorities conduct their procurement. More in detail, for each of the 20 Italian regions Table 5 shows the subdivision of contracts awarded between 2000 and 2008 according to the four auction formats described earlier: FP, AB, SR and N. For each region and each format, the table indicates the mean value of the winning discount, the mean value of the number of offers, the probability of a local winner, and the number of tenders. As regards the exact definition of these three outcome variables on which our empirical analysis focuses, the winning discount is defined as the percentage discount over the publicly announced reserve price (i.e. the maximum price the PA announces that it is willing to pay for the execution of the contract). The number of offers is self explanatory,

while the probability of local winner refers to whether the winning firm is registered with one of the boards of trade in the contracting authority's region.

Some aspects emerge clearly from Table 5: first of all there is an absolute preponderance of AB auctions over all the other formats. We also notice a considerable heterogeneity in the different Regions in the use of the remaining three formats. Secondly, in AB auctions we witness a lower discount in comparison to FP auctions, though the AB auctions receive a higher number of bids. The probability of having a local winner is markedly higher in the N format, even if in some Regions SRs present even higher values. While these results suggest significantly different performances in the contract award systems of the various Regions, the detection of a causal relationship between the reforms under analysis and the performance measures has to overcome the usual difficulties in identifying a causal effect of these reforms. We now explain our empirical strategy to assess the effects of such reforms.

5.2. Empirical strategy

Our empirical analysis focuses on two types of local reforms: those involving modifications of the AB rule and those changing the qualification requirements. To separately identify the effect of these reforms on auction outcomes we use a difference-in-differences (DD) method exploiting the difference in the timing with which these reforms were adopted. More precisely, we seek to estimate the following regression model:

$$Y_{ist} = a_s + b_t + cX_{ist} + \beta(\text{Policy}) + \varepsilon_{ist}$$

where the index i indicates the auction, s the PA and t the year. The coefficient of interest is β , the effect on the dependent variable of a dummy variable (indicated as Policy) equal to one for the contracts for which the policy change analyzed was enacted, conditional on fixed effects for the PA (a_s) and time (b_t) and on other covariates (X). The dependent variables considered are the winning rebate, the number of bids and a dummy for whether the winner is from the same region of the PA.

In an ideal dataset, we would observe that, given a group of similar auctions, a randomly chosen subset is run under the reformed rules, while the rest remains under the status quo rules. This allows to interpret the estimate of β as the causal effect of the introduction of the rule changes. Our dataset differs from this scenario because the only treated auctions are those held in the region adopting the reform, after its implementation. However, the DD method ensures that a causal interpretation of β is possible if we can find a control composed of auctions that would have expressed the same outcomes of the treated ones absent the treatment. Our solution consists in considering four different sets of control groups obtained by the combination of different sets of regions and types of contracts. These restrictions allow us to have treated and control groups that are statistically similar before the policy change.

More in detail, however, the restriction on the set of regions allows us to isolate auctions that are more homogeneous in terms of regulations, market structures and realization costs. Similarly, the restriction on the type of contracts, that we implement by focusing exclusively on roadwork contracts, serves to isolate a set of auctions that across the regions considered are more comparable in terms of how the auction reserve price is set. This is because the reserve price must be set using regional price menus and quantities related to the technical features of the job. The regions that we select have similar price menus and geographical characteristics. Therefore, especially for simple roadwork contracts where the scope for choosing the type and quantity of inputs is

³⁶ A detailed description of the data set is available in Decarolis (2009) and Decarolis (2014).

³⁷ The AVCP is the Italian Authority for the Supervision of Public Contracts for Works, Services and Supplies.

Table 5
Auctions outcome measures across Italian regions.

Dependent variables:	Regions:	Auction formats				Regions:	Auction formats			
		FP	AB	SR	N		FP	AB	SR	N
Winning bid (mean)	Abruzzo	24.89	18.83	17.40	14.26	Molise	19.50	20.43	15.02	11.72
Number of bids (mean)		23.95	31.91	21.36	7.390		21.70	40.81	14.79	6.630
Probability of local winner		0.500	0.570	0.510	0.750		0.600	0.610	0.680	0.750
Number of auctions		11	2167	25	272		9	674	2	107
Winning bid (mean)	Basilicata	19.78	21.73	18.78	16.83	Piedmont	29.40	14.95	14.20	12.18
Number of bids (mean)		24	38.85	24.04	15.83		11.62	29.64	18.28	5.960
Probability of local winner		0.450	0.550	0.410	0.570		0.730	0.650	0.500	0.750
Number of auctions		28	935	14	141		659	6888	139	520
Winning bid (mean)	Calabria	20.48	20.11	18.01	12.36	Puglia	23.30	23.85	20.89	17.59
Number of bids (mean)		14.93	28.16	19.80	9.930		13.40	35.27	31.15	13.79
Probability of local winner		0.540	0.730	0.560	0.700		0.390	0.720	0.660	0.760
Number of auctions		69	2324	64	145		47	3967	115	272
Winning bid (mean)	Campania	27.67	27.91	26.15	19.06	Sardinia	20.84	14.27	14.52	9.920
Number of bids (mean)		39.85	45.76	26.90	13.22		13.53	15.99	11.84	5.510
Probability of local winner		0.780	0.820	0.780	0.770		0.480	0.720	0.610	0.630
Number of auctions		280	5232	186	401		59	3693	75	184
Winning bid (mean)	Emilia Romagna	15.38	11.21	11.32	7.840	Sicily	14	12.83	1.270	9.390
Number of bids (mean)		29.40	28.21	9.470	4.590		48.07	79.74	109.2	11.69
Probability of local winner		0.570	0.630	0.740	0.810		0.650	0.810	0.670	0.790
Number of auctions		275	7824	167	1293		214	5828	53	401
Winning bid (mean)	Friuli Venezia Giulia	22.41	6.750	12.52	5.610	Tuscany	14.02	13.42	13.14	9.420
Number of bids (mean)		10.58	14.16	8.240	5.650		15.41	28.85	17.50	6.200
Probability of local winner		0.0800	0.660	0.710	0.850		0.440	0.540	0.490	0.750
Number of auctions		8	585	5	1090		148	6040	48	1111
Winning bid (mean)	Lazio	21.83	26.81	19.84	13.26	Trentino Alto Adige	22.58	10.65	16.18	12.59
Number of bids (mean)		28.47	57.34	26.66	7.520		13.44	12.26	7.840	5.110
Probability of local winner		0.630	0.780	0.750	0.840		0.510	0.810	0.850	0.910
Number of auctions		57	7475	90	1441		90	2608	339	1819
Winning bid (mean)	Liguria	15.17	12.11	11.64	8.890	Umbria	26.89	14.35	15.46	9.910
Number of bids (mean)		32.52	21.84	15.27	5.520		21.68	39.69	13.73	6.230
Probability of local winner		0.550	0.620	0.550	0.660		0.180	0.440	0.300	0.720
Number of auctions		405	2647	20	482		17	1620	18	463
Winning bid (mean)	Lombardy	15.87	11.87	11.46	9.850	Valle d'Aosta	18.33	15.11	16.23	12.99
Number of bids (mean)		20.08	24.44	12.21	6.050		8.120	36.73	24.61	5.760
Probability of local winner		0.770	0.720	0.770	0.810		0.180	0.550	0.500	0.790
Number of auctions		215	3381	28	427		2	873	28	258
Winning bid (mean)	Marche	16.28	14.40	14.45	10.88	Veneto	11.95	11	11.49	9.890
Number of bids (mean)		18.49	28.95	14.99	7.750		23.50	37.18	19.95	6.590
Probability of local winner		0.220	0.480	0.580	0.630		0.640	0.730	0.750	0.890
Number of auctions		29	2748	34	650		201	5711	98	1706

limited, we are confident that the reserve prices are comparable. A more in depth discussion of how the reserve price is set and of why it is essential to properly controlling for it in the context of a difference-in-differences analysis of AB auctions is contained in [Decarolis \(2014\)](#).

One limitation of our approach is that since we will be considering cases involving changes in one region per time, the effect that we estimate could be confounded by any other change occurring in the treated region at the same time of the policy change. This type of problem often affects DD studies. However, under certain conditions, if the number of control units is large, then it is possible to correct for it. This issue is explored in [Decarolis \(2014\)](#) where the changes of the AB format occurring at municipal and county level allow him to construct a control group composed by a large number of municipalities and counties. Unfortunately, this type of procedure is unfeasible in our context because we analyze changes at regional level and the number of regions is too limited. Therefore, our findings must be interpreted given this limitation. This argument also suggests that our estimates using a set of five regions as control are relatively more reliable than those using one single region as control because it is the control unit that could be

shocked at the same time in which the treated unit receives the treatment.

5.3. Findings on the AB format reforms

We start by studying specific cases of local reforms tailored towards the auction format distinguishing between cases of virtuous and non-virtuous reforms.

5.3.1. A virtuous case: Turin and the abandonment of the AB format

A case of virtuous changes to auction formats is that of the Municipality of Turin, which replaced the AB with the FP format in 2003. This choice, shortly afterwards made by the Turin Province as well, was explained by the local legislator as necessary due to collusion between firms and to the total incongruity of the bids (always in great numbers) in relation to execution costs.

This reform has been analyzed by a few recent studies which we summarize below. The first study, [Conley and Decarolis \(2011\)](#), sets out to analyze the behaviour of firms exclusively in AB auctions and develops two statistical tests aimed at identifying respectively

Table 6
Estimate of the 2002 reform of AB in Friuli.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Winning discount (percentage of reserve price)								
Policy	-2.14*** (0.761)	-2.11*** (0.707)	-1.72** (0.734)	-0.91 (0.766)	-2.23 (1.719)	0.36 (2.303)	-2.01 (1.825)	0.38 (2.365)
Obs.	6427	6427	1430	1430	2201	2201	494	494
R-squared	0.11	0.52	0.06	0.47	0.16	0.64	0.05	0.66
Panel B: Number of bids submitted								
Policy	-1.94 (2.46)	-2.82 (2.28)	-2.87 (2.66)	-1.68 (2.50)	-4.61 (7.74)	-0.15 (6.25)	-6.56 (8.27)	-3.40 (6.41)
Obs.	6955	6955	1561	1561	2321	2321	533	533
R-squared	0.03	0.45	0.06	0.55	0.04	0.59	0.05	0.74
Panel C: Winner located in the same region as the PA								
Policy	0.19*** (0.06)	0.18*** (0.05)	0.19*** (0.06)	0.13** (0.06)	0.16 (0.10)	0.12 (0.12)	0.16 (0.11)	0.24** (0.12)
Obs.	6978	6978	1564	1564	2330	2330	534	534
R-squared	0.02	0.31	0.01	0.35	0.01	0.38	0.01	0.48

Robust standard errors in brackets. Level of significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Model specification: odd numbered columns include dummy variables for regions and years; even numbered columns additionally include dummy variables for the identity of the PA, its type (municipality or province), the level of the reserve price and the type of work. Columns 1–4 include all types of works, while columns 5–8 include only roadwork contracts. Control groups: columns 1–2 and 5–6 use as controls the contracts awarded in Piedmont, Lombardy, Liguria, Veneto and Emilia-Romagna, while columns 3–4 and 7–8 include only contracts awarded in Veneto. All auctions were held between August 2001 and June 2003. All auctions included are AB.

the coordination in the offers and in the participation of colluding enterprises. The study illustrates how, paradoxically, the presence of several cartels is the only possible form of competition in AB auctions and thus reveals that, though the activity of the cartels is a crime under the Italian Law, it also allows savings for the public administrations.

Although this result leaves us in no doubt about the problems connected to the AB format, what has been said previously about the risks of failure to complete works and about corruption risks makes it easier to understand why the abandonment of the AB auction in favour of FP is not necessarily to be regarded as positive, unless it is accompanied by measures aimed at reducing these two risks. Indeed, the second study that we review, Decarolis (2014), using the DD methodology described above finds that the switch from AB to FP auctions almost doubles the winning rebates, which increase by approximately 10 percentage points. At the same time, the higher discounts in the adjudication phase are partly balanced by an increase in the final price paid after renegotiations. Its increase reduces by approximately one half the savings in the adjudication stage. This shortcoming of the FP format, together with the expense of the reviewing process of the abnormal offer that it entails, are probably the reason behind the new assessments made by Turin Province which decided in 2010 to partially revert back to AB auctions. Indeed, the data clearly shows how verifying congruity of bids in FP auctions generates costs for the administration: with FP the adjudication process takes approximately 50 days longer than with AB auctions; in addition, in approximately 15% of cases, at least one offer is excluded, and this nearly always generates a further dispute.³⁸

In conclusion, the passage from the AB to the FP auction format can work and really improve the system for selecting private contractors only when the contracting authorities can benefit from an appropriate and effective form of assessment for abnormal tenders (as in the case of the Municipality of Turin). In the light of these observations, what Veneto Region attempted in 2007 seems reasonable, i.e. to shift to FP while at the same time setting up provincial committees to support contracting authorities that apply

for their assistance. This shift, however, never took place because the Constitutional Court rejected the Regional Law approved by Veneto.

5.3.2. Some non-virtuous cases: regional versions of the AB format

Many of the local reforms of the AB format, listed in Table 3, are difficult to understand from the point of view of improving the efficiency of the award system. Indeed, from the theoretical point of view, reforms like those undertaken by Valle d'Aosta in 2005 or by Friuli in 2002 do not solve the problems of the national AB format. Moreover, as argued earlier, while concerns about corruption might justify the preference for the AB format in southern regions, it seems likely that the only justification for the reforms in Friuli and Valle d'Aosta is an attempt to close their market to firms outside these regions. In line with this prediction, Tables 6 and 7 show the results of the DD estimation of the effects these two reforms had on auction outcomes.

Table 6 presents the results for the 2002 reform in Friuli. The eight columns of the table report results for different control groups and different model specifications, as described in the table note. Overall, the estimates suggest that there is some weak evidence in favour of a reduction of the winning discount and a somewhat more robust evidence in favour of a higher share of local winners. The latter effect is large in magnitude, amounting to an increase ranging between 12 and 24% of the share of contracts won by local winners. The lack of any significant effect on the number of bids might be due to the conflicting effects produced by the reform: local firms might increase their participation because it is now easier to win, but non-local firms are less likely to bid.

In the case of Valle d'Aosta, analyzed in Table 7, the results indicate a substantial reduction in winning discounts of approximately 7% on the starting price and no changes in the number of participants or local winners. Therefore, the new award criterion in Valle d'Aosta, even more unpredictable than the national criterion, because it entails the random draw of a value included in calculating the abnormality threshold, seems to have increased expenses for the contracting authorities in that Region. Similarly to what argued for Friuli, the lack of an effect on the other two outcomes might be driven by the fact that despite the change in auction format tends to increase entry costs, the substantially lower winning discounts encourage entry. Overall, for both reforms the worsening of the winning

³⁸ Again, in view of these considerations, we should not look unfavourably at the Regional Laws applied by several Regions in the South (Campania, Puglia, Calabria and Sicily), which, after the entry into force of the Public Procurement Code, prohibited the application of FP in favour of AB, thus guaranteeing that an inefficient process for assessing bids (mainly because of high corruption risks, not only because of technical inefficiencies) failed to produce significant damage on the award system.

Table 7
Estimate of the 2005 reform of AB in Valle d'Aosta.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Winning discount (percentage of reserve price)								
Policy	−6.38*** (0.86)	−6.39*** (0.61)	−6.56*** (0.97)	−6.48*** (0.69)	−9.89*** (0.85)	−8.72*** (1.48)	−10.44*** (−1.41)	−10.10*** (−1.91)
Obs.	10,422	10,422	3882	3882	3944	3944	1254	1254
R-squared	0.13	0.47	0.07	0.49	0.24	0.55	0.15	0.53
Panel B: Number of bids submitted								
Policy	0.73 (10.42)	1.81 (2.84)	1.37 (10.74)	3.30 (3.38)	−9.32 (13.64)	1.52 (6.16)	−8.53 (14.23)	2.71 (8.20)
Obs.	10,959	10,959	4112	4112	4083	4083	1316	1316
R-squared	0.10	0.43	0.07	0.47	0.18	0.55	0.12	0.52
Panel C: Winner located in the same region as the PA								
Policy	−0.04 (0.09)	−0.03 (0.05)	−0.03 (0.09)	−0.04 (0.06)	0.12 (0.12)	0.14 (0.12)	0.15 (0.12)	0.16 (0.13)
Obs.	11,008	11,008	4146	4146	4097	4097	1323	1323
R-squared	0.01	0.26	0.00	0.27	0.01	0.27	0.02	0.28

Robust standard errors in brackets. Level of significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Model specification: odd numbered columns include dummy variables for regions and years; even numbered columns additionally include dummy variables for the identity of the PA, its type (municipality or province), the level of the reserve price and the type of work. Columns 1–4 include all types of works, while columns 5–8 include only roadwork contracts. Control groups: columns 1–2 and 5–6 use as controls the contracts awarded in Piedmont, Lombardy, Liguria, Veneto and Emilia-Romagna, while columns 3–4 and 7–8 include only contracts awarded in the bordering region (Piedmont for Valle d'Aosta and Veneto for Friuli). All auctions were held between September 2002 and December 2006. All auctions included are AB.

discounts from the perspective of the PA provides additional evidence in favour of our negative judgement about these local reforms.

5.4. Findings on the qualification requirements reforms

Several local reforms among those described in Section 3 seem to be aimed at closing the local market to competition from external firms. This is, for example, the case of the creation of regional qualification registers and of the use of a restricted procedure as the standard procedure.

The following analysis the effect on bidder participation of what took place in Valle d'Aosta and in Friuli. In Valle d'Aosta, in December 2006, there was a period of opening up to the market when the special restricted procedure previously introduced by the Region was declared unconstitutional. By contrast, in Friuli in November 2006 we witnessed a period of closure towards the market, with the introduction of a required minimum number of employees registered with the INPS Pensions Institute in the Friuli Region itself as a requirement for firms to participate in restricted procedure auctions in Friuli. To carry out this analysis we use the same DD methodology described earlier. Indeed, the structure of Table 8 is identical to that of the previous two tables. In terms of outcome variables, we focus exclusively on the number of bids, which is the most relevant one for this type of reform and the only one for which we find some significant effects.

The results presented in Table 8 show that, for Friuli, even though the estimated coefficients are all negative, the variability of the estimates does not allow us to identify any statistically significant effect. On the contrary, for Valle d'Aosta, the regressions that include all types of contracts and that include the full set of auction and PA controls reveal a substantial increase in the number of bidders. Therefore, we conclude that there is some weak evidence that the reforms involving bidders' qualifications had the expected effects on participation. It should be stressed, however, that the reform in Valle d'Aosta that led to an increase in participation of about 17 bidders per was imposed by the Constitutional Court's sentence that blocked a local reform by this region. Therefore, overall we find once again that the data support the negative assessment of the reforms introduced by these regions, at least along the dimension studied here.

6. Some policy implications

The analysis that has been carried out clearly shows how the public procurement sector in Italy is characterized by the

significant influence of local regulations, in a way that goes well beyond the limits of the current constitutional distribution of competencies and is often geared towards being an impediment to fair competition. In consequence, often significant differentiations in the way work contracts are awarded occur simply on the basis of where the contracting authority is located. There is also considerable uncertainty for firms in a context, which is already characterized by a remarkable degree of complexity from both the technical and the procedural points of view.

These crucial problems could, at least partially, be compensated by implementing measures aimed at: (i) improving the transparency and quality of information; (ii) providing greater coordination between local and national reforms; (iii) making controls on regulations enacted by Regional Government and Local Authorities more efficient; and (iv) improving the statutory framework at the national level. In the rest of this section, we shall concentrate, for each aspect, on the main limits of the current regulation, suggesting some possible corrective measures.

6.1. Greater transparency and better information quality

The information on public works contracts in Italy, both as regards the sources of law and the various phases of award and execution of the contract, is insufficient and – in many cases – barely accessible: this means increasing difficulties for both entrepreneurs and contracting authorities because of the lack of clarity of the regulatory context, and implies serious limitations in analysing the performance of the public procurement system, as well as in identifying the areas of greatest inefficiency. The following measures could be considered to overcome these problems at least in part.

(a) *Establishing an observatory to monitor the reforms adopted by regional and local authorities.* The legal framework for the award of public works contracts is not only extremely complex, but also difficult to find out about. In fact, the analysis of regional, provincial and municipal rules has shown that there is no a single centre to acquire the relevant regulations,³⁹ but that there

³⁹ There are a number of initiatives, such as the monitoring activities carried out by the Institute for regional innovation and transparency in public procurement and environmental compatibility – Itaca (the results of which are available at <http://www.itaca.org/news+dettaglio.asp?ID=37>) or that achieved by the online procurement portal (whose results are available on <http://www.appaltiinlinea.it/normativa.appalti/index.htm>), and – limited to Veneto – the activities of the portal Venetoappalti.it (the results of which are available at http://www.venetoappalti.it/normativa/norme_regionali/indice_norme_regionali.htm). These initiatives are useful and worthy of appreciation, but have just a partial sphere (for

Table 8
Effect on the number of bids of the reforms in Friuli and Valle d'Aosta.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Number of bids submitted (Friuli, reform to close the market)								
Policy	−19.33* (10.41)	0.77 (8.94)	−26.87** (13.58)	−28.12 (24.33)	−7.23 (17.54)	−3.12 (7.45)	−20.11 (22.02)	−9.21 (10.11)
Obs.	9335	9335	1794	1794	3615	3615	711	711
R-squared	0.09	0.40	0.09	0.54	0.17	0.51	0.16	0.61
Panel B: Number of bids submitted (Valle d'Aosta, reform to open the market)								
Policy	16.36 (13.52)	16.70*** (3.97)	14.8 (14.18)	17.42*** (5.26)	26.69 (20.26)	11.51 (7.91)	25.39 (21.69)	14.65 (11.66)
Obs.	3670	3670	1369	1369	1526	1526	458	458
R-squared	0.05	0.51	0.02	0.49	0.12	0.63	0.04	0.53

Robust standard errors in brackets. Level of significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Model specification: odd numbered columns include dummy variables for regions and years; even numbered columns additionally include dummy variables for the identity of the PA, its type (municipality or province), the level of the reserve price and the type of work. Columns 1–4 include all types of works, while columns 5–8 include only roadwork contracts. Control groups: columns 1–2 and 5–6 use as controls the contracts awarded in Piedmont, Lombardy, Liguria, Veneto and Emilia-Romagna, while columns 3–4 and 7–8 include only contracts awarded in the bordering region (Piedmont for Valle d'Aosta and Veneto for Friuli). For the Friuli regressions the time span is June 2003–August 2007; for the Valle d'Aosta ones it is September 2005–September 2008.

are different and often heterogeneous sources of law. In many cases, Regions and Local Authorities have made their regulations accessible on their websites; however, often the information is incomplete, both from the point of view of timely updating, both as regards the consultation of historical texts of the various pieces of legislation. This situation significantly increases the uncertainty for entrepreneurs.

In order to overcome the critical issues highlighted it would be appropriate to establish an observatory (for example, within the Italian Authority for the Supervision of Public Contracts for works, services and supplies – AVCP) to monitor the reforms adopted by Regions and Local Authorities, in order to facilitate their disclosure and verifiability. It would also be useful to give these authorities information duties regarding any changes in their regulations, providing disciplinary and pecuniary penalties in case of failure to comply with such obligations.

(b) *Reforming the process of collecting data on public procurement.* In 2000 the AVCP established a database on public works contracts (BDNCP),⁴⁰ which is a potentially useful tool to monitor the performance of the procurement system and to identify the areas of greatest inefficiency. However, the experience gained over eleven years of activity of the database signals the presence of serious malfunctions. In fact, the data currently collected by the AVCP, far from representing the situation of the Italian public procurement system in a complete way, offer only a patchy coverage of the country. The main reason lies in the process of collecting the data: typically, the information relating to a contract is submitted by the contracting authority using special software that transfers the information to a Regional Observatory, to which the contracting authority belongs and then the Regional Observatory transfers it to the AVCP Observatory.⁴¹ Therefore, this Observatory does not have direct control of the information sent by contracting authorities, but very much depends on the work of the Regional

Observatories leading to substantial discrepancies in the completeness and accuracy of the data collected for the region in question.⁴² Unfortunately, problems in collecting information, especially with regard to the execution phase of the contract, affect the entire universe of contracting authorities, given that there is an inadequate system of incentives and penalties for incorrect or incomplete communications.

Therefore, we suggest the following measures: (i) the elimination of the Regional Observatories which, from the technical point of view, are only an obstacle to the proper functioning of the public works contracts database – BDNCP; (ii) the assignment to the AVCP of real powers to impose sanctions against contracting authorities that do not comply with the communication requirements; (iii) the duty for the AVCP to make public on a regular basis the results of monitoring the completeness of the BDNCP and sanctions taken against contracting authorities.

(c) *Ensuring greater access to information on public procurement.* It is also essential to ensure full accessibility to data on public procurement. In this way, in fact, every citizen could – at least potentially – monitor the work of the PA.⁴³ At the same time, it would be necessary to implement measures on standard costs (defined as a benchmark by which to compare the costs incurred by each administration), in order to avoid, or at least greatly limit, the risk that a virtuous general government entity is sanctioned where pay rates are higher than average, but at the same time ensure superior levels of quality, so as to justify the increase in costs.

In this sense, some useful lessons can be drawn from the experiences of other countries (for example, the U.S. and the UK), where there are initiatives to release the data on the public procurement system: Websites data.gov and data.gov.uk allow all citizens acquire detailed information on any public works contract. Moreover, in the United States the various Departments of Transportation (DoTs) of each State provide very detailed information on every aspect of the award and execution of public works. Some DoTs allow access to certain types of data on

example, municipal and provincial regulations are excluded) and do not allow us to fully reconstruct the legal framework in force.

⁴⁰ Article 20 of the Law Decree No. 5 of 9 February 2012, converted into Law No. 35 of 4 April 2012 (the “Simplifications Decree”) provides that, starting from 1 January 2013, evidence to prove the possession of general, technical and organizational, economic and financial requirements to participate in procedures for the award of public contracts is available on the database established by the AVCP.

⁴¹ In a few regions the contracting authorities send their data directly to the AVCP Observatory. From this point of view, the recent Legislative Decree No. 33 of 14 March 2013 did not innovate. In fact, it only provided that: (i) each administration makes public specific (few) information about the procedures for the award and execution of public works, services and supplies (for example, the method of selection of the contractor, the award price or the timing of completion of the work); (ii) such information are electronically transmitted to the AVCP for publication (also) on its website; (iii) the AVCP communicate – by 30 April each year – to the *Corte dei Conti* (the body with audit functions in Italy) the list of administrations that have failed to comply with their obligations.

⁴² Having analyzed the version of the database active until May 2008, Decarolis & Palumbo (2011) found that no contract among those awarded in Basilicata and Campania between 2000 and 2008 can be analyzed due to lack of or incorrect communication of data regarding the cost and duration of the execution of the public works.

⁴³ In this regard, we suggest disclosing the data with a certain time delay (for example, after 5 years), to prevent data availability from facilitating the maintenance of collusion (Decarolis et al., 2010). It should be noted that only since 2013 the AVCP has activated the first portal of public procurement in Italy (so-called Transparency Portal: <http://portaletrasparenza.avcp.it/microstrategy/html/index.htm>), with the aim to make public the information provided by the contracting authorities. However, such advertising is only related to the tenders held since January 1st, 2011 and covers a limited subset of the information for which there is an obligation to transmit.

the stages following the award of contract only upon payment of a fee: the funds raised help to maintain databases of high quality.

6.2. Greater coordination of reforms between the central and local levels

In Italy there is an almost total absence of coordination of reforms between central and local levels although, in this area, it is more necessary than ever to have connection and dialogue between the different government levels, first, to avoid the repetition of mistakes made in the past; and second, to identify best practices and maximize the potential added value due to the greater proximity of Regions and Local Authorities to local needs. To this end, improvements could be achieved by the measures described below.

(a) *Strengthening of connecting channels between the state, regions and local authorities.* Currently, the possibility to benefit from the experiences at the local level does not seem to be sufficiently explored: as we have seen, some of the reforms introduced at regional or even municipal and provincial level show that – under certain circumstances – individual cases may reveal the limits and critical points of the system as a whole.

Therefore it is necessary to ensure a closer link in the process of rule-making between the central and local levels, in order to select best practices and ensure their implementation at the national level. Therefore, it is necessary to strengthen the role and tasks of the institutional bodies already in charge of promoting cooperation between the State, Regions and Local Authorities, such as the Permanent Conference for relations between the State, the Regions and the Autonomous Provinces of Trento and Bolzano or the State-city and Local Governments Conference, which should become the “forum of choice” for political negotiations between the Central Government and the system of Regional, Provincial and Municipal Authorities.

(b) *Creating ad hoc technical structures.* For the same purpose, it would be desirable to create ad hoc technical structures (for example, within the AVCP), with tasks of analysis and study of the reforms at the local level for the award of public works contracts, with the aim – on the one hand – to derive information about the specific characteristics of the area to which they relate (for example, greater or lesser exposure to the risk of corruption or collusion); on the other, to find regulatory solutions best suited to the characteristics identified above. These technical structures should also have an advisory role, in order to guide national and regional legislation in the public procurement sector.

6.3. Enhanced role for sector authorities

The role of sector authorities needs to be strengthened in order to ensure a better functioning of the public procurement system and to create, as soon as in the medium term, a strong incentive for behaviour that is more in line with the main national and EU regulations. To this end, the following measures could be considered.

(a) *Strengthening the powers of the Competition Authority.* Recently the Italian Competition Authority (AGCM) was granted the power to contest regulations and administrative acts of any government entity that violates the rules for competition protection.⁴⁴ The innovation, already advocated by many (AGCM, 2010; Sabbatini, 2011), is aimed at strengthening the powers of

the Competition Authority to increase the deterrence against anti-competitive choices made by local authorities.

The role of the Italian Competition Authority, should be strengthened further by expressly granting – given its independence, impartiality and technical competence – the possibility to contest Regional legislation before the Constitutional Court if, in the exercise of its functions, it finds Regional rules that may be in contrast with the constitutional and EU principles for competition protection (Bianco et al., 2012; Patroni Griffi, 2006).

(b) *Strengthening the advocacy powers of the AVCP.* It would also be appropriate to strengthen the advocacy powers of the AVCP relating to public procurement, in particular extending these powers to cases in which, performing its procedural functions, it finds local legislation or administrative acts adopted in breach of national regulations on public works contracts.

6.4. Improvements in national legislation

Improvements in the national legislation governing the public procurement system are desirable, so that the regional and local authorities have less of an interest in modifying them (Decarolis et al., 2010). In particular, we suggest:

(a) *Limitations on automatic exclusion (AB auctions).* The Italian rules on abnormal bids place more restrictions than those of the EU or other countries on general government powers in the earliest phase of determining which offers can be accepted. Generally, the main problem is the residual possibility of the automatic exclusion of abnormally low tenders, which creates a powerful incentive for firms to collude. Accordingly, the automatic exclusion mechanism should be barred or drastically restricted, provided that this is accompanied by stronger measures against breach of contract by the eventual awardee.

In particular, it may be useful to favour centralization in assessing anomalies, putting specialized technical bodies in charge⁴⁵ (following the model of the central purchasing agencies).⁴⁶ This could reduce the corruption risk of lowest-price adjudications and also contain the costs sustained by the single adjudicating authorities, which mainly reflect the checking of abnormalities (Decarolis, 2009). Moreover, it would be appropriate to strengthen the system of guarantees, increasing the surety amount and to extend gradually the use of performance bonds.

(b) *More use of the most economically advantageous criterion (SR auction).* Especially where the technical characteristics can be differentiated according to a quality scale in advance and graduated by degree of desirability in view of the authority’s objectives, the most economically advantageous criterion should be encouraged. In view of the technical and procedural difficulties, this would

⁴⁵ Under the regulations, the responsibility for assessing anomalies can be assigned to either an auction commission (where established) or to the technical organs of the adjudicating authority i.e. to the special commission pursuant to Article 88(1)(b) of the Public Procurement Code, preferably made up of personnel from the administration, with the possibility, however, of naming outside experts in the case of justified technical deficiencies and/or lack of resources. But these solutions appear unworkable for small authorities, which would find it hard to ensure satisfactory assessment of the congruity of bids with acceptable costs.

⁴⁶ The purchasing centre is an adjudicating administration that can directly purchase supplies and services assigned to other adjudicating authorities or proceed to award contracts or conclude framework agreements for projects, supplies or services in favour of those other administrations (Articles 3(34) and 33 of the Public Procurement Code). From this point of view, the measures enacted by Law 136/2010 (Special Anti-Mafia Plan and Delegation to the Government for Anti-Mafia Provisions) are of special interest. To rationalize and improve the quality of structures, the law provides for the institution, at a regional level, of one or more adjudication authorities to guarantee transparency, regularity and fair costs in the management of public contracts and to prevent the risk of mafia infiltration. The implementing procedures are defined in a presidential decree. These authorities could play a significant role in the assessment of abnormal offers (Decarolis et al., 2010).

⁴⁴ See Article 35 of Decree Law No. 201 of 6 December 2011, converted into Law No. 214 of 22 December 2011, which introduced Article 21-bis of Law No. 287 of 10 October 1990.

require a central adjudicating entity to compensate for the lack of technical capabilities among local authorities in particular.⁴⁷

(c) *Combating corruption.* The assignment of greater discretionary power to general government should be counterbalanced by strengthening anti-corruption measures, in view among other things of the risk of criminal infiltration in the Italian procurement sector. Controls on subcontracting should be strengthened. Indeed, though the regulations for subcontracts, within the limits of Article 118.11 of the Code, applies to “any contract dealing with activities, wherever performed, requiring the employment of labour” (for example, rental and supply of operating equipment with installation), contracts not ascribable to these classifications, or outside the quantitative limits, are excluded, thus making it possible to circumvent the rules.⁴⁸

It should also be noted that the new EU rules on the participation of firms that do not themselves meet all the requirements but that can “borrow” them from an auxiliary firm not only present risks for the project execution but could also facilitate elusion of the rules on subcontracts and on temporary joint ventures.⁴⁹ The problem is particularly serious because of the lack of more specific rules defining how the “borrowing” of requirements works, setting limits on it, and coordinating it properly with the anti-mafia measures.⁵⁰

The recent raising to €1,000,000 of the ceiling for the direct award of public works contracts by negotiation, without a call for tender and with no further limitations in connection with the characteristics of the project, is questionable in terms of corruption and criminal infiltration. It indiscriminately increases discretionary powers to select contractors for auctions which, while below the EU threshold, nevertheless account for over 80% of the contracts (Decarolis et al., 2011). It would be appropriate to limit the use of negotiated procedures.

7. Conclusions

The Italian public procurement sector is characterized by hyper-regulation at regional and sometimes also at the municipal level, which makes legal compliance particularly burdensome for both entrepreneurs and contracting authorities. In some cases the regulation has had positive effects serving the specific needs of the territory; in others, an anti-competitive stance prevailed, with extra costs for the contracting authorities and less efficient allocation of resources. Our study suggests a number of possible improvements:

- (a) greater transparency and better information quality, establishing an observatory (for example, at AVCP) to monitor the reforms adopted by regional and local authorities, and reforming the process of collecting data on public procurement, in order to improve its efficiency, and extending accessibility;
- (b) greater coordination of reforms between the central and the local levels, by strengthening the role and tasks of the institutional bodies already in charge to promote cooperation between the State, Regions and Local Authorities, such as the

Permanent Conference for relations between the State, the Regions and the Autonomous Provinces of Trento and Bolzano, and the State-City and Local Governments Conference, and the creation of ad hoc technical facilities;

- (c) an enhanced role for the sector authorities (in particular AGCM and AVCP), in order to ensure a better functioning of the public procurement system and more effective compliance with European law;
- (d) improvements in national regulation so that the Regional and Local Authorities have less of an interest in modifying them. In particular it would be appropriate to introduce: (i) the abolition of automatic exclusion of abnormal tenders (AB auctions), provided that this is accompanied by stronger measures against breach of contract by the eventual awardee; (ii) better employment of the most economically advantageous adjudication criterion for complex auctions; (iii) counterbalancing the increased discretionary powers of general government by strengthening anti-corruption provisions, especially by reorganizing the certification bodies and stepping up inspections of subcontracting.

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⁴⁷ A significant role could be played by the Single Adjudicating Authorities provided for by Law 136/2010.

⁴⁸ Exceptions (such as simple supply) and quantitative limits on the definition of subcontract could favour criminal infiltration, especially where organized crime is deep-rooted. Experience has shown that the risk is heightened once the works are under way and the contractor needs supplies from other firms (for materials, services and so on), making broadly defined subcontracting vulnerable to circumvention of the legal limitations (CNEL, 2008).

⁴⁹ See *Conferenza unificata Stato-Regioni-Città*, judgement of 9 February 2006 (available at <http://www.giustamm.it>).

⁵⁰ In particular, specifying the cases when it qualifies as a subcontract, dealing with the conferment not so much of requirements but a real firm activity. On this point Article 49, paragraph 10, of the Public Procurement Code is limited to allowing the auxiliary company to fulfil the role of subcontractor.

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