



E/CNMC/004/18

**OVERVIEW OF PUBLIC
PROCUREMENT
PROCEDURES IN SPAIN**

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EXECUTIVE SUMMARY

There is no question that public procurement is very important in Spain. Depending on the estimate and the year, it accounts for **10% to 20% of Spanish GDP**. It also plays a very significant role in the implementation of public policies, boosts innovation, provides high-quality public services, fosters social integration and increases the country's productivity.

Various national and international organisations have noted that **Spain's public procurement system is not sufficiently competitive and is lacking efficiency**. Hence, there is room for improvement.

In order to improve the efficiency of public procurement, **it is crucial to implement pro-competitive regulation and procurement procedures**. Competition among bidders is translated into lower bid prices, higher quality of goods and services and a wider range of bids. It also optimises the use of public funds, benefitting both the contracting government body and citizens. Lack of competition may result in an unnecessary waste of public resources, which are scarce and costly, increasing the risk of collusion among companies and corruption.

The CNMC has identified the lack of access, transparency and public notice in tendering as among the problems that result in *'less competitive tension and less efficiency in public procurement than desirable'*. Therefore, the CNMC recommends that public bodies should implement **open, transparent and competitive procedures**, to the extent that this is possible, in their acquisition of goods and services.

This study evaluates the impact of implementing more competitive procurement procedures on economic efficiency. Specifically, the aim is to **isolate and quantitatively determine the effect of the procurement procedure chosen** on the cost of the contract for the government.

The study makes use of the increased availability of systematised data on public procurement in Spain. However, **existing databases present considerable limitations**, making it difficult to perform analyses of this type.

Until recently, access to public procurement data has been limited in Spain, due mainly to the heterogeneity of the information sources. Improvements are expected in this regard with the new Public Sector Contracts Act (LCSP in its Spanish acronym), in force since March 2018.

However, **there remains another fundamental problem for quantitative analysis in this area: data quality**. The information published on the different procurement platforms contains a number of inconsistencies and missing data that are not negligible. The new Public Sector Contracts Act has introduced the obligation to publish call for tender announcements on the platform, under penalty of nullity (art. 39 LCSP), raising expectations for future improvements in data

quality. Furthermore, the act creates the Independent Office for Regulating and Monitoring Procurement, which may play an important role in improving data quality and give data analysis a significant role in the National Public Procurement Strategy.

Due to poor data quality, **the analysis focuses only on central state government procurement since detailed analysis for autonomous communities and local governments has not been possible.**

In general, the analysis of the study provides evidence for the existence of weak competitive intensity in public procurement. One sign of this is the **high frequency of calls for tenders in which a limited number of participants submit bids: in almost 34% of central state contracts, there is a single participant**, and in 66% of contracts, there are 3 or fewer participants.

Another important conclusion of the analysis is that – excluding minor contracts, which have not been studied in detail due to the lack of consistent data – **in contracts for small amounts, which represent a significant share of all contracts, a negotiated procedure without publication of notice has very often been employed.**

The results of the econometric analysis performed show that **the choice of the procurement procedure is not neutral in terms of the efficiency** of public procurement.

Specifically, an open procedure (the most competitive of all) is negatively correlated with the bid price paid by the government for the tender: **the government pays, on average, 9.9% less in contracts for which an open procedure is used rather than a non-open procedure (negotiated, restricted and competitive dialogue).** Regarding the number of participants, the inclusion of one additional firm in a lot is translated into an average reduction of 2.1% in the price to be paid by the government. The results vary by contract type, with the impact of the contracting procedure chosen being greater for works contracts than for services and utilities.

To illustrate, **if it had been possible to use open procedures in all tendering, the cost of public procurement would have been – as a minimum and using very conservative criteria – some 1.7 billion euros less for the 2012–2016 period.** This figure should be taken with caution, as it is not possible to use an open procedure in every case where one is not used, according to the rules of public procurement.

The results of the analysis do not mean that governments should systematically opt for open procedures to the detriment of non-open procedures (negotiated, restricted and competitive dialogue). The latter procedures are perfectly compatible with procurement regulations and should be used if they are justified by the characteristics of the contract. Furthermore, the

analysis only evaluates the bid cost of the contracts (not the final cost) and does not consider the quality dimension of the contract.

However, **it is important for public administrations to be aware of the cost of using less competitive procedures, so that they may make the best decisions possible for an efficient use of public funds.**

Based on the analysis conducted, the CNMC issues four recommendations for public administrations.

Firstly, public administrations should adhere to and participate in the objective of **increasing the integration of the different databases for public sector contracts**, as required by the new Public Sector Contracts Act.

Secondly, public administrations should adhere to and participate in the objective of achieving a higher level of oversight in the **accuracy and reliability of the information published** on the different procurement platforms.

Thirdly, public administrations should adhere to the objective of **achieving a more competitive public procurement in Spain**. It is essential for government authorities to conduct rigorous analyses of the competitive conditions in the market before engaging in procurement, and for them to assess the efficiency of the contracts following their completion. It is advisable for public administrations to follow the more specific recommendations of the CNMC for public procurement, particularly, the [Guide on Public Procurement and Competition \(2011\)](#).

Lastly, public administrations should choose the **most suitable procurement procedures for the specific circumstances of each contract**. The choice of non-open procedures should be reserved for those cases in which the loss of economic efficiency is compensated by other benefits, which must be adequately detailed and documented.

I. INTRODUCTION

The importance of public procurement in Spain is unquestionable. According to the OECD, public procurement accounted for 10.5% of Spanish GDP and represented 23.9% of total expenditures by Spanish public administrations in 2015¹. In the past, the CNMC has estimated that procurement accounts for 18.5% of GDP (CNMC, 2015), and other sources give an even higher estimate². Additionally, public procurement plays a very significant role in the implementation of public policies, boosts innovation, provides high-quality public services, fosters social integration and increases the country's productivity. It affects all markets and, as a result, prices, quality, productivity and the welfare of citizens.

Given the significance of public procurement, and the limited nature of public funds, it is crucial to improve the efficiency of public procurement by implementing pro-competitive regulation and procurement procedures³.

Competition incentivises bidders to adjust the price of their bids, to increase the quality of goods and services, and to submit a wider range of bids. It optimises the use of public funds, benefitting both the contracting authority and citizens. On the other hand, inadequate competition conditions can result in an unnecessary waste of public resources, which are scarce and costly, increasing the risk of collusion among companies⁴ and, eventually, corruption.

The National Commission on Markets and Competition (CNMC) is committed to improving procurement procedures, and preventing and pursuing anticompetitive practices in the sphere of public procurement. Among other actions, the CNMC has been training the different public administrations in an efficient design of tender requirements and detection of possible cartels since 2014, to support ex officio detection.

Despite the legislative advances undertaken within the framework of the European Union, a number of national and international organisations have outlined the deficiencies of Spain's public procurement system in terms of both

¹ According to data taken from the OECD document '[Government at a glance 2017](#)', calculated based on the systems of national accounts of the different countries.

² The Public Procurement Observatory estimates it at 20% of GDP.

³ Article 1 of [Act 9/2017, of 8 November, on Public Sector Contracts, which transposes into Spanish law the Directives of the European Parliament and of the Council 2014/23/EU and 2014/24/EU, of 26 February 2014](#).

⁴ Collusion between bidders in a tender process occurs when they agree to fix the price or any other condition of trade, or to share the market, seeking to obtain greater profits from public competitive bidding (CNC, 2011).

competition and efficiency. Therefore, there appears to be considerable margin for improvement.

Within the sphere of the European Union, European Council Decision 2017/984 of 8 August 2016⁵ states that *'Spain stands out for a low publication rate of contract notices and a relatively high use of the negotiated procedure without prior publication compared with other Member States'*. Lack of publicity and the use of non-open procedures hamper competition and often result in direct awarding of contracts, with implications in terms of higher general government expenditure. The same document states that insufficient *ex ante* and *ex post* control mechanisms *'hinder the correct and uniform application of public procurement legislation'*.

Additionally, the European Commission's Single Market Scoreboard⁶, which measures the overall performance of public procurement in the different Member States, underlines Spain's poor showing. According to the latest available data for 2017, Spain obtained unsatisfactory results in 10 out of 12 considered indicators, being among the worst performing countries. In particular, Spain's performance is lacking in the indicators involving competition, access to procurement markets and data quality⁷.

At the national level, the CNMC has identified that the absence of sufficient access, transparency and public notice in public tendering result in *'less than desirable competitive tension and efficiency in public procurement'* (CNMC, 2015). Therefore, the CNMC recommends that public authorities implement open, transparent and competitive procedures for the acquisition of goods and services, whenever possible⁸.

⁵ [Council Decision 2017/984 of 8 August 2016, giving notice to Spain to take measures for the deficit reduction judged necessary in order to remedy the situation of excessive deficit.](#)

⁶ The [Single Market Scoreboard](#) for public procurement assesses the performance of public procurement in each Member State based on 12 indicators: presence of a single bidder, transparency of the procedure, publication rate, centralised purchasing, contract award criteria, speed of the award decision, contracts allocated to SMEs, bids by SMEs, division into lots, insufficient call for bid information, missing registration numbers for successful bidders and missing registration number for contracting bodies. A more detailed explanation of these indicators is included in [Appendix I](#).

⁷ For more information, see [Appendix I](#).

⁸ Additionally, the CNMC report on the draft bill for the Public Sector Contracts Act ([IPN/CNMC/010/15. Report on the draft bill for the Public Sector Contracts Act](#)) identifies a number of changes needed in the procurement system. Among others, it identifies the need for improvement in promoting competition and efficient management of public funds by contracting bodies (and their assigned staff) and the need to prioritise evaluation (*ex ante* and *ex post*) of procurement processes, taking indicators of effective competition and efficiency into account.

In Spain, the traditional lack of sufficiently systematised, representative, disaggregated and high-quality data on public procurement has hindered quantitative analysis in this area. Until recently, there was a wide variety of information sources, not generally connected to one another, which made the aggregation of information difficult⁹.

This study makes use of the increased availability of systematised data on Spanish public procurement with the overall aim of improving existing knowledge on the dynamics of competition in public procurement. More specifically, the document seeks to evaluate the impact on economic efficiency of employing more competitive procurement procedures.

The document is organised as follows: The first section provides an analysis of the regulatory framework and information sources available for public procurement. The second section includes a descriptive analysis of state public procurement¹⁰, focused on fundamental variables related to competition, and presents an econometric analysis of the data, based on the related literature. The third section offers an estimate of the savings that would result from replacing non-open award procedures (negotiated, restricted and competitive dialogue) with the open procedure. The final two sections of the document present the conclusions from the study and policy recommendations.

⁹ It is important to stress the difficulty of quantitative analysis of public procurement due to the heterogeneous nature of available information. The [2017 Public Procurement Oversight Report](#), prepared by the State Consultive Board on Public Procurement and submitted to the European Commission in April 2018, indicates that: *'Faced with the impossibility of obtaining all the information requested by the European Union from the official sources available (principally the Public Sector Contracts Platform and the Public Sector Contracts Register), given the heterogeneous nature of the same and the immediacy of the deadlines set, it was decided to create a specific questionnaire which included the questions to which the European Commission had requested answers. This questionnaire would gather information for each awarding authority.'*

The new Public Sector Contracts Act, in force since March 2018, seeks to overcome this obstacle, which affects both public notice and transparency in public procurement, as well as its analysis. Thus, its article 347.3 mandates the interconnectivity of the platforms of the different government bodies and public entities, with the aim of setting up a single platform centralising public notices for public procurement.

This article offers good prospects. However, on a cautionary note an effective oversight of the interconnectivity of these platforms must be exercised, to maximise its benefits for contracting bodies, firms and citizens.

¹⁰ The absence of data quality controls results in the lack of representativeness of those calls for tenders that are published on the Public Sector Procurement Platform. The only representative dataset available is that relating to the state level. As a consequence, this work was conducted solely based on this dataset. **The data available for this analysis refers to the central state government level for the 2012–2017 period.** A conservative approach was adopted in this paper, focusing on state public procurement due to the lack of representative data on other government levels. Nonetheless, in the future we hope to be able to expand this analysis to the autonomous community and local levels.

II. ANALYTICAL FRAMEWORK

II.1. Regulatory framework

As in other fields of administrative law, the international regulatory framework, and especially that of the European Union, has shaped the regulation of public procurement. The majority of the amendments to Spanish public procurement legislation are a consequence of the transposition of European legislation to national law. Specifically, [Act 9/2017, of 8 November, on Public Sector Contracts](#) (LCSP), in force since March 2018, transposes Directives 2014/23/EU and 2014/24/EU of the European Parliament and of the Council into national law.

The new Directive 2014/24/EU on public procurement replaces Directive 2004/18/EC on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts, which had been transposed into Spanish law by Act 30/2007, of 30 October, on Public Sector Contracts. Act 30/2007 was subsequently repealed and replaced by the consolidated text of the Public Sector Contracts Act (hereinafter, TRLCSP), passed by Royal Legislative Decree 3/2011, of 14 November.

National regulation of public procurement is supplemented by specific regulations which govern special sectors (water, energy, transport and postal services)¹¹, which are excluded from the general regulatory framework. Additionally, there is a different system for procurement in matters of security and defence.

Successive reforms of European directives have sought to strengthen the implementation of principles such as non-discrimination and equal treatment among potential candidates, public notice, effective competition, transparency in public procurement and efficient public expenditure¹².

As a result, Spanish legislation has also incorporated these principles into its legal texts. Specifically, the purpose of Act TRLCSP, governing the analysed period 2012-2017, is *'to ensure, in connection with the objective of budget stability and expenditure control, the efficient use of funds allocated to carry out works,*

¹¹ Special sector contracts are outside the scope of this study. However, the CNMC reported on the draft bill on procurement procedures in the water, energy, transport and postal services sectors in its Report on Draft Regulation [IPN/CNMC/011/15](#) (see [English summary](#)).

¹² *'The award of public contracts by or on behalf of Member States' authorities has to comply with **the principles of the Treaty on the Functioning of the European Union (TFEU)**, and in particular the free movement of goods, freedom of establishment and the freedom to provide services, **as well as the principles deriving therefrom, such as equal treatment, non-discrimination, mutual recognition, proportionality and transparency**. However, for public contracts above a certain value, provisions should be drawn up coordinating national procurement procedures so as to ensure that those principles are given practical effect and **public procurement is opened up to competition**.'* Directive 2014/24/EU of the European Parliament and of the Council, of 26 February 2014, first recital.

purchase goods and hire services by requiring prior definition of the needs to be met, safeguarding free competition and selecting the most economically advantageous tender'.

Decisions made by public administrations during the design, development and implementation stages of the tender procedure affect potential competition in public procurement processes. It is clear that compliance with regulation is compulsory. However, regulation offers a variety of alternatives for each stage, which may foster or restrict competition¹³. Competition may be encouraged, for instance, by eliminating unjustified restrictions in the technical - professional and economic-financial quality requirements¹⁴, by publicising tender processes more widely, or by using award procedures that attract a larger pool of participants.

With regard to the contract award procedure, the TRLCSP stipulates that minor contracts¹⁵ may be awarded directly to any undertaking with full capacity to act and the professional qualifications necessary for the provision. The CNMC has been critical of the minor contract figure, as it exempts the award from fulfilling the majority of record-keeping requirements as well as all of those related to the award procedure¹⁶. The new LCSP has limited the cases in which minor contracts can be used¹⁷.

¹³ Specifically, the purpose of the Guide on Public Procurement and Competition (CNC, 2011) is to provide guidelines for contracting bodies so that the design, development and implementation of procurement procedures do not include unjustified restrictions on competition.

¹⁴ Participants in the tender are required to demonstrate their creditworthiness (economic-financial quality) and competence (technical-professional quality) (articles 74–79 of the TRLCSP). The contracting authority establishes the specific minimum requirements to be met by bidders, which are included in the tender announcement or invitation to bid in the procedure.

¹⁵ Pursuant to the TRLCSP, minor contracts are those works contracts with a value less than 50,000 euros, or other contracts valued less than 18,000 euros, without prejudice to the provisions of article 206 related to works, services and supplies centralised at the state level.

¹⁶ In its [IPN/CNMC/010/15](#) report, the CNMC criticised the Act for retaining this figure, as: (i) it is not required by the Directive; (ii) it is a practice that contradicts the principles underlying public procurement, such as competition, non-discrimination and equal access, and whose application should be exceptional at most; (iii) academic and external control bodies provide ample evidence and criticism on the abuse of the minor contract figure. It should be remembered that the principle of free competition among tenderers is compulsory for all contracts and there are other mechanisms in place that safeguard free bidding and efficient economic regulation. Therefore, the CNMC recommended that this figure should be abolished and replaced by simplified open procedures.

¹⁷ The new LCSP (art. 118) has amended the minor contract figure, most notably by: (i) reducing its implementation thresholds (40,000 euros for works and 15,000 euros for supplies and services); (ii) including the obligation to demonstrate that the subject of the contract is not being modified to avoid the application of general procurement rules, and that the contractor has not signed additional minor contracts exceeding those thresholds when taken individually or as a whole; and (iii) including minimum quarterly publicity requirements of all information related to these contracts (art. 63.4).

In all other cases, the TRLCSP stipulates that the contract must be awarded following ordinary open or restricted procedures. **In exceptional cases, it will be possible to utilise other procedures, such as competitive dialogue or negotiated procedures, with or without notice.** Specifically, negotiated procedures may only be used when certain circumstances occur, such as, among others, when the tender is declared void, or when economic offers are considered inadequate after following an open, restricted or competitive dialogue procedure, or when extreme urgency, brought about by events unforeseeable for the contracting authority, require the rapid performance of the contract¹⁸.

A priori, the open procedure is the most favourable for competition, allowing the participation of all interested economic operators that meet capacity and solvency requirements. As the CNMC stresses in the [Report on the Draft Bill for the Public Sector Contracts Act](#) (IPN/CNMC/010/15), open procedures entail the greatest competitive tension, which can result in considerable efficiency and savings gains. Therefore, it is advisable for this to be the only ordinary tender procedure¹⁹.

The other procedures limit the participation of bidders to a greater or lesser extent:

- In the restricted procedure, there is a preliminary stage during which the contracting authority evaluates whether the candidates fulfil quality and solvency requirements. Only those undertakings selected in this first phase may submit their bids. The law requires that the minimum number of candidates be no less than five and allows the contracting authority to set a maximum on the number of candidates that will be invited to submit a proposal.
- In the competitive dialogue procedure, the contracting authority selects a group of candidates, upon prior request by the latter, with which it engages in a dialogue in order to develop solutions that satisfy its requirements, and that serve as a basis for the bids submitted by selected candidates²⁰.
- In the negotiated procedure with notice, any interested firm may submit a bid, after which the public authority will negotiate the terms of the contract with selected candidates.

¹⁸ Article 170 of the TRLCSP contains the general provisions for the implementation of the negotiated procedure. Articles 171–174 specify the cases in which works, services and supplies contracts may be awarded using a negotiated procedure.

¹⁹ *'To select any other procedure, the contracting bodies should very carefully consider the impact of such a decision on competition, even if using alternative procedures could facilitate management and reduce the duration of the procedure'* ([IPN/CNMC/010/15](#)).

²⁰ As stipulated in article 180 of the TRLCSP, this type of contract may be used for particularly complex contracts, when the contracting authority believes that the use of open or restricted procedures does not allow for an appropriate award of the contract.

- In a negotiated procedure without notice, the contracting authority directly contacts several firms, with which it negotiates the terms of the contract. In these procedures, the general rule requires that the contracting authority consults at least three firms, which are deemed to meet the capacity and solvency requirements, whenever this is possible, and proceeds to negotiate the technical and financial aspects of the contract with each one of them. In practice, despite the requirement of a minimum number of candidates, it is common for a smaller number to be contacted, sometimes resulting in a direct award.

The scope of application of the TRLCSP includes all contracts of the public sector, including: the State Government, the governments of autonomous communities, entities comprising local government, autonomous bodies, state-owned enterprises, public universities and other bodies listed in article 3 of the regulation²¹.

²¹ Article 3.1 of the TRLCSP considered the following bodies, organisations and entities to be part of the public sector:

- a) The State Government, autonomous community governments and entities comprising local government.
- b) Management Agencies and Common Services of Spanish Social Security services.
- c) Autonomous bodies, state-owned enterprises, public universities, state agencies and any other bodies governed by public law with their own legal status associated with an entity that is part of the public sector or that is dependent on it, including entities that are functionally independent or that are recognised special autonomy by law, and that have been assigned external regulatory or oversight functions over a certain industry or activity.
- d) Business corporations in which more than 50% of the share capital is held, directly or indirectly, by those entities mentioned in letters a) to f) of this paragraph.
- e) Consortia with their own legal status which are mentioned in article 6.5 of Act 30/1992, of 26 November, on the Legal System of the Public Administrations and of the Common Administrative Procedure, and legislation regulating local government.
- f) Foundations set up with a majority contribution, direct or indirect, from one or more entities which are part of the public sector, or foundations whose founding equity is comprised primarily (more than 50%) of assets or rights contributed or assigned by the above-mentioned entities, on a permanent basis.
- g) Mutual Funds for accidents at work and occupational illness associated with the Social Security.
- h) Any bodies, organisations or entities with their own legal personality which have been created specifically to meet public interests which are not industrial or mercantile in nature, provided that one or more entities belonging to the public sector provide most of the funding for their activity, control their management, or appoint more than half of the members of their governing, management or oversight body.
- i) Associations made up of the bodies, organisations and entities mentioned in the preceding letters.

II.2. Information sources

To be able to monitor the competition conditions prevalent in our public procurement system, an efficient access to information is needed, and quality data needs to be available, so that the resulting analysis is rigorous and its conclusions are valid.

- In the case of Spain, there are various sources of information on public procurement. Firstly, the government maintains a **Public Sector Contracts Register**, created to support analysis and research on public procurement and to comply with international obligations regarding the publicity of information.

According to the TRLCSP, all contracting authorities, both central and regional, autonomous bodies and other entities governed by public law are required to report to this register basic information²² on the contracts they award. Any subsequent changes to the original contract need to be reported as well, such as modifications, extensions, variations in deadlines or price, the final value of the contract and its termination. The register constitutes the official central information system on public procurement in Spain, containing data for the entire population.

According to art. 333 of the TRLCSP, the register was created '*to support the ongoing review and improvement of public procurement procedures and practices, the analysis of the quality, reliability and efficiency of its suppliers, and the **oversight of competition** and transparency in public markets*'. Information published in the Public Contracts Register is of interest, as it enables a general understanding of public procurement in Spain.

- The **Public Sector Procurement Platform** is a completely up-to-date electronic platform where calls for tenders and their results are posted. Pursuant to article 334 of the TRLCSP, contracting party profiles of contracting authorities within the state public sector must be included on this platform and their management and publicity undertaken within the platform. On the other hand, contracting party profiles of contracting authorities within autonomous communities or local governments may publish their calls for tenders on the Public Sector Procurement Platform

²² Pursuant to Appendix I of Royal Decree 817/2009, the following information must be reported to the Public Sector Contracts Register: contract type, contract year, contracting government, contracting authority, contract identification code, place of execution, subject-matter of the contract, CPV code for the subject of the contract, procurement by lots, whether the contract is a mixed contract or a framework agreement, publicity of the contract, chosen procedure, contract prices (bidding, award), performance period, whether the time span of the contract is multiannual, price review mechanisms, contractor, award date and performance date.

or on their own procurement platforms²³. In the latter case, the Law on Market Unity (LGUM)²⁴ requires the platforms of the different government authorities and public entities to be interconnected in order to establish a single platform that centralises the publication of public sector procurement. This requirement was also included in the new LCSP²⁵.

- The **Ministry of Finance Centralised Procurement Portal** publishes calls for tenders for supplies, works and services that are contracted for on a general basis (using framework agreements, centralised contracts and other procedures) and have essentially homogeneous characteristics²⁶. Authorities, entities and organisations within the state public sector may participate in this type of contracts.

Autonomous communities, local entities and authorities associated with any of these may join this system to purchase all or some of the categories of centralised goods and services contracted for by means of framework agreements.

- Additionally, autonomous communities and autonomous cities have established their own **autonomous community platforms**. The following communities have issued their own platforms: Castile-La Mancha, the Government of the Balearic Islands, the Government of Cantabria, the Government of the Canary Islands, the Government of Valencia, the Government of Extremadura, the Government of Aragon, the Government of Castile and Leon, the Government of Catalonia, the Principality of Asturias, the Community of Madrid, the Region of Murcia, the Government

²³ More information about the location of the autonomous community platforms is available on the Public Sector Procurement Platform: <https://contrataciondelestado.es/wps/portal/plataforma>.

²⁴ According to Additional Provision Three of Act 20/2013, of 9 December, on Market Unity: ‘*The calls for tenders and their results for all entities listed in paragraph 1 of Article 3 of the consolidated text of the Public Sector Contracts Act shall be published on the platform, in all cases, either directly by the contracting authorities or by interconnection with electronic devices that aggregate procurement information from the different government authorities and public entities.*’

²⁵ Article 347.3 of Act 9/2017, of 8 November, on Public Sector Contracts stipulates: ‘*In any event, and irrespective of the option chosen by the autonomous communities or autonomous cities, from among those indicated in the first two subparagraphs of this paragraph, they must publish all calls for tenders and their results on the Public Sector Procurement Platform, either directly or by interconnection with electronic devices that aggregate procurement information in the event that they have their own information services.*’

²⁶ These goods or services that have previously been declared homogeneous and suitable for centralised purchasing. [Order HAP/2834/2015](#), of 28 December, amending Order EHA/1049/2008, of 10 April, on declaring goods and services for centralised procurement lists the products and services included within the scope of central procurement offices and the specific aspects to be taken into account in each case.

of Andalusia, the Basque Government, La Rioja, Galicia, the Government of Navarre, Ceuta and Melilla.

- Lastly, at the European level, there is another source of information, the **Tenders Electronic Daily (TED)**, which is the online version of the Supplement to the Official Journal of the EU dedicated to public procurement. It is an up-to-date platform on calls for tenders and results for public contracts within the European Economic Area (EEA). Calls for **tenders which exceed certain financial thresholds**, regulated by Regulation 1177/2009 and established based on the contract type²⁷, must be published in this platform. The awarding authority for the contracts published on TED may be the central government, a local authority or a regional authority in each EEA Member State.

For the purpose of performing a detailed analysis of competitive dynamics in public procurement in Spain, these data sources present several limitations.

Using the Public Sector Contracts Register as a source of information for a detailed analysis of competition in procurement poses a number of limitations, as it contains information for a **small number of variables** and award results²⁸, sometimes overly **aggregated**. Specifically, the register does not contain information about the number of participants, a fundamental variable for any procurement study; and information regarding the award procedure²⁹ is limited to the frequency of use of open and restricted procedures, as information on the frequency of use of less competitive procedures is not available. Furthermore, register data is published with a lag not suitable for analyses that require **up-to-date data**³⁰.

²⁷ These thresholds have been modified every two years during the analysed period. For example, from 1st January 2016, works contracts and concession contracts for public works whose estimated value is greater than or equal to 5,225,000 euros are subject to harmonised regulation. The same applies to contracts for supplies or services whose estimated value is greater than or equal to 209,000 euros (if the contracting authority is not part of the State Government, its autonomous authorities or administrative entities and common services of the health and social services) or when their estimated value is greater than or equal to 135,000 euros, in cases where they are part of the aforementioned government bodies (<https://www.boe.es/boe/dias/2015/12/31/pdfs/BOE-A-2015-14343.pdf>).

²⁸ In 2016, only two tables were published for each level of government: ministries, autonomous communities, local entities, as appropriate, cross-referenced with contract type, number and price awarded. In the years prior to 2013, a larger number of cross references were published, making it possible to do a more complete analysis of public procurement.

²⁹ In the register, the award procedure is divided into three categories: open, restricted and other. This last classification includes negotiated procedures without notice, negotiated with notice, competitive dialogue and those tender processes in which no procedure is assigned. It is therefore not possible to separately identify the frequency of each one of these.

³⁰ The last available data in December 2018 were for 2016.

In order to evaluate the effectiveness of competition in public procurement and the efficiency of use of public funds, a larger number of variables is needed for the analysis. Other information sources provide a wider range of variables, such as the Public Sector Procurement Platform, the autonomous community procurement platforms and the Ministry of Finance Centralised Procurement Portal.

These platforms publish a significant amount of information about a considerable number of tender processes. They contain detailed information for each tender on, among other things, the number of participants, the award procedure chosen, tender budget, estimated value of the contract, award price,³¹ identification of the successful tenderer, contracting authority ('subsidiary' and 'parent'³²), contract type, type of funding programme used, type of processing followed and subject-matter of the contract.

However, there is a considerable lack of oversight and monitoring of the information published on these platforms, often resulting in a **lack of data**. Despite the obligation to publish call for tenders and their results on the Public Sector Procurement Platform, determined by the LGUM and by the current Public Sector Contracts Act, there is a deficit in the number of tenders being published³³. According to studies performed by Transparency International Spain and the Public Procurement Observatory on the publication of contracts and tenders on the Public Sector Procurement Platform³⁴, we find a low level of compliance by certain public entities. The most recent data available for May 2017 indicate that just 51% of councils and 59% of autonomous communities comply with the rule and publish their calls for tenders and results on the procurement platform.

In addition, the lack of oversight sometimes results in **erroneous or missing figures**. In order to be able to conduct an accurate study of public procurement, it is necessary to detect errors and check the consistency of the data. Specifically, we find that many of the results of the tender process omit information on the number of participants in the procedure, a fundamental variable from the perspective of competition. The same is true of the award price, another variable

³¹ A detailed description of these characteristics of the tender is provided in [Appendix II](#).

³² A distinction is made between the 'subsidiary' contracting authority and the 'parent' contracting authority (organisational structure on which former is dependent).

³³ Article 39 of the new Public Procurement Act takes a positive step by establishing as grounds for nullity of the contract 'the failure to publish the tender notice in the contracting party's profile hosted on the Public Sector Procurement Platform or the similar information services of the autonomous communities, in the "Official Journal of the EU" or the medium of notice in which it is required, pursuant to Article 135'.

³⁴ <https://transparencia.org.es/informe-sobre-cumplimiento-por-las-instituciones-publicas-de-la-normativa-legal-sobre-contratos/>

whose publication is required and of considerable interest, which is oftentimes not published in the results of the contract.

Contract modifications deserve a special mention, as they are not included among public available information, which makes it impossible to determine the final price for which the government is purchasing the respective work, service or supply. In the specific case of works contracts, these modifications are especially significant, as they occur with considerable frequency and have a considerable impact in terms of prices.

Because of these inadequacies, and in order to carry out this study, the CNMC has had to make a significant effort to aggregate the information on tenders published in the different information sources, primarily using information from the Public Sector Procurement Platform, the Ministry of Finance Centralised Procurement Portal and some of the autonomous community procurement platforms.

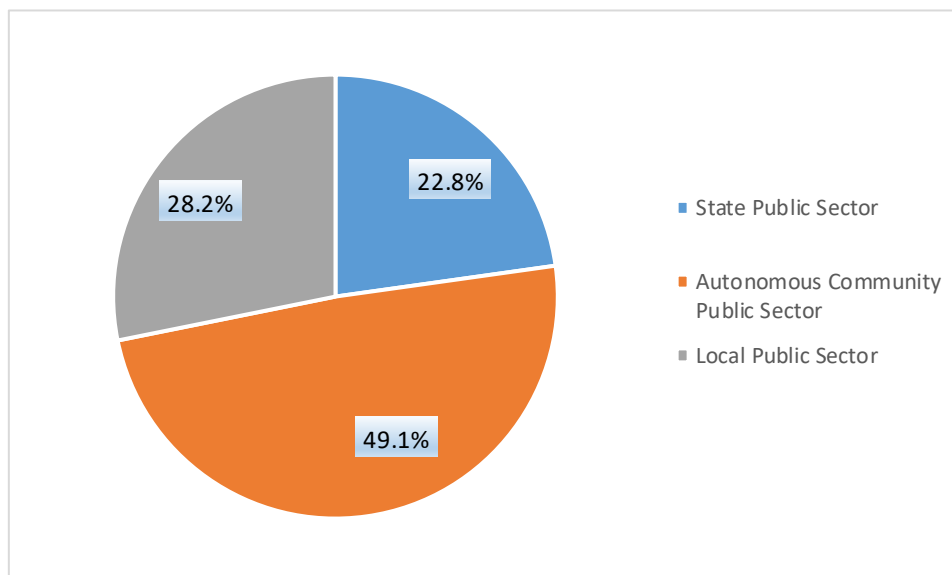
II.3. Stylised facts regarding procurement procedures in Spain

Available data on the Public Sector Contracts Register make it possible to identify some of the overall trends in public procurement in Spain and the use of the different procurement procedures. It should be taken into account that the analysis was performed based exclusively on data from the Public Sector Contracts Register, which omits certain forms of public procurement³⁵. Additionally, minor contracts have been excluded from the analysis.

In Spain, there is a **high degree of decentralisation in public procurement**. During the 2012–2016 period, in terms of awarded expenditures, state procurement represented 22.8% of the total, while autonomous community and local entities accounted for 49.1% and 28.2% of the total expenditure respectively (Graph 1).

³⁵ Specifically, it does not include data on in-house providing procedures, or information about **contracts based** on framework agreements. In addition, although it is required for all public contracts to be registered with the Public Sector Contracts Register, it is not known whether all contracts are in fact registered, as no effective control procedures are in place in this regard.

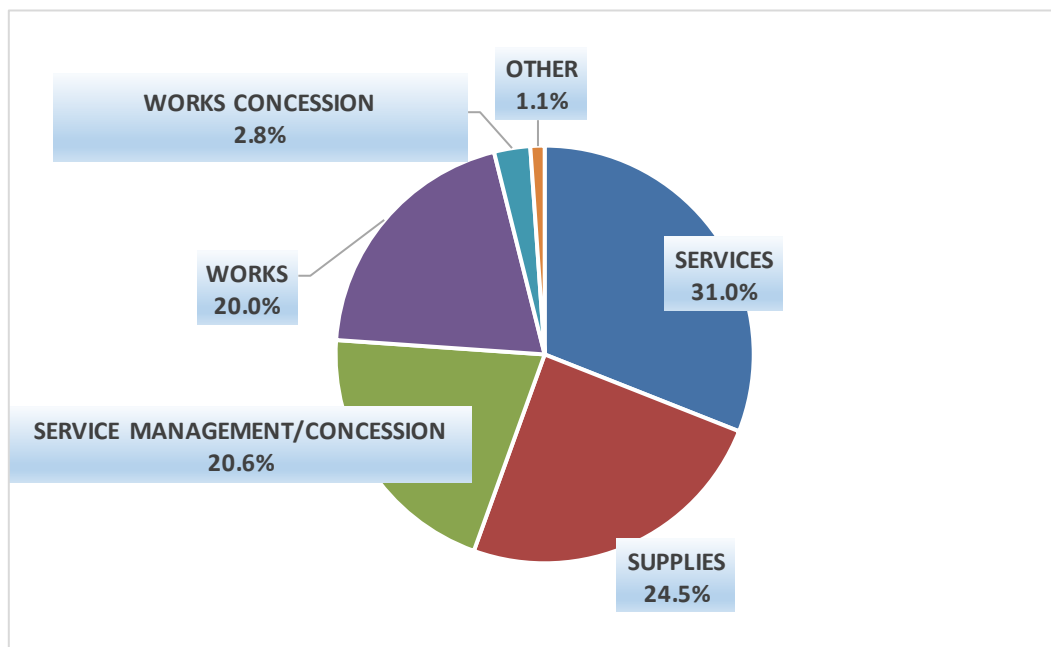
Graph 1. Distribution of the total value of public procurement in Spain by government level. 2012–2016



Source: Public Sector Contracts Register.

Classifying expenditures by contract type, Graph 2 shows that service contracts represent the largest amount of the total number of contracts (31.0%), followed by supplies contracts (24.5%), service management contracts or concession contracts (20.6%) and contracts for works (20.0%).

Graph 2. Distribution of the total value of public procurement in Spain by contract type. 2012–2016

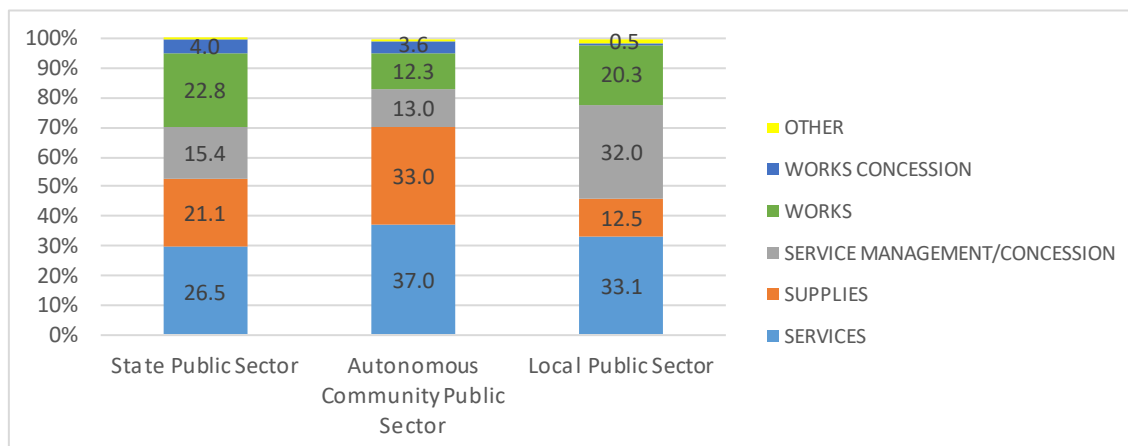


NB: Category 'Others' includes special administrative contracts, contracts for public–private partnerships, and another category called 'Others' by the Register.

Source: information provided by the Public Sector Contracts Register. Provisional data as of 19/12/2018 according to the information provided by public administrations.

The distribution of procurement by contract type differs somewhat depending on the government level (Graph 3). Thus, the state public sector allocates more funds in proportion to services (36.5%) and works (22.8%). In the autonomous community public sector, services (37.0%) and supplies (33.0%) contracts get a higher share of public procurement expenditures. In the local public sector, the highest share goes to service contracts (33.1%) and service management or concession contracts (32.0%).

Graph 3. Distribution of the total value of public procurement in Spain by contract type and government level. 2012–2016

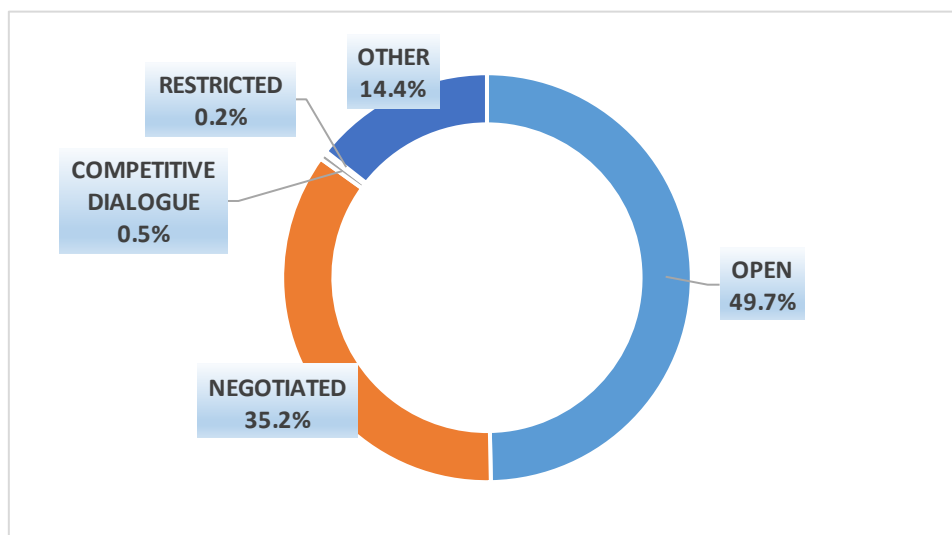


NB: the 'Others' category includes special administrative contracts, contracts for public-private partnerships, and a category also called 'Others' in the register itself.

Source: information provided by the Public Sector Contracts Register. Provisional data as of 19/12/2018 according to the information provided by public administrations.

Turning to procurement procedures, the open procedure is the most widely used, accounting for 49.7% of the contracts. It is followed in importance by the negotiated procedure (35.2% of contracts), while the other procedures account for a smaller share (Graph 4).

Graph 4. Distribution of the total value of public procurement in Spain by type of procurement procedure (by volume). 2012–2016



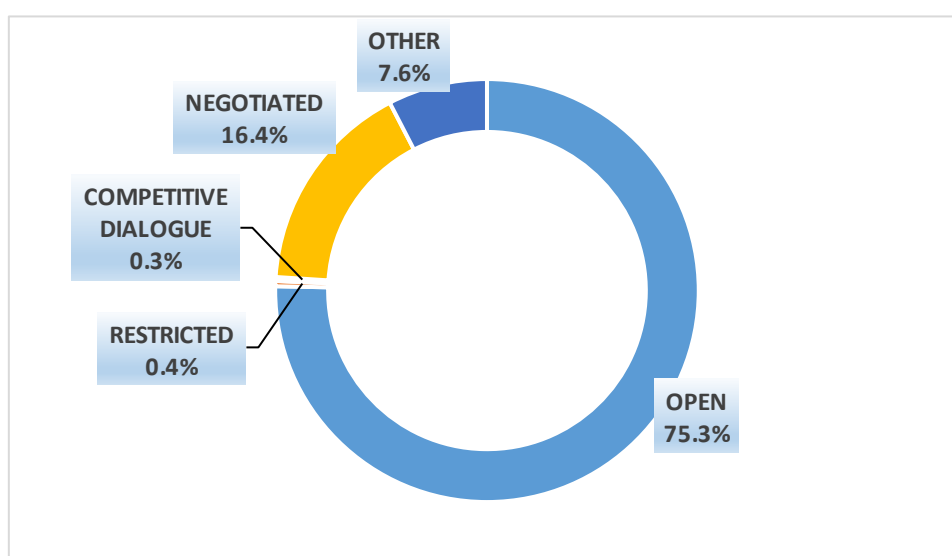
NB: based on the information submitted to the register by public bodies, it is not possible to distinguish between negotiated procedures with and without notice. The 'Others' category

includes those contracts in which the reporting party chooses this option or does not indicate any award procedure.

Source: information provided by the Public Sector Contracts Register. Provisional data as of 19/12/2018 according to the information provided by public administrations.

In terms of the value of the contracts, in Spain, the majority of them are awarded using the open procedure (75.4%). The negotiated procedure accounts for 16.4% of the total value of public procurement expenditures (Graph 5)³⁶.

Graph 5. Distribution of the total value of public procurement in Spain by type of procurement procedure (by amount). 2012–2016



NB: based on the information submitted to the register by public bodies, it is not possible to distinguish between negotiated procedures with and without notice. The 'Others' category includes those contracts in which the reporting party chooses this option or does not indicate any award procedure.

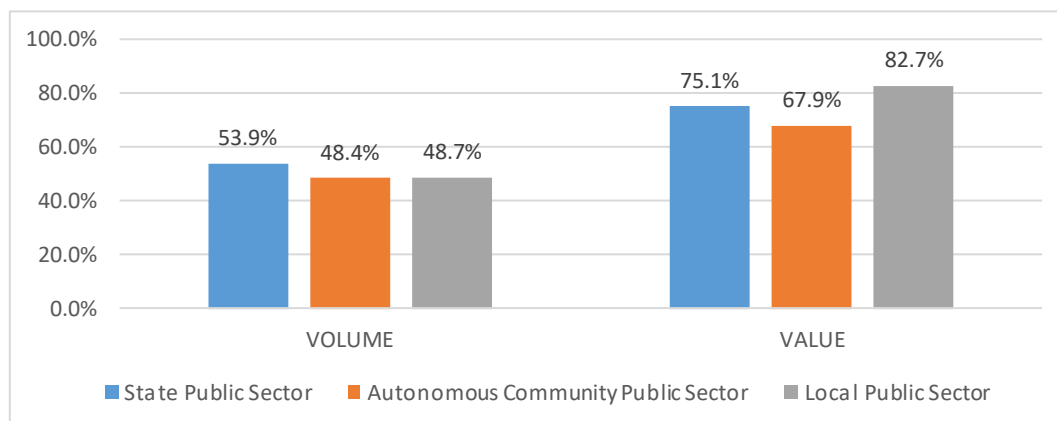
Source: information provided by the Public Sector Contracts Register. Provisional data as of 19/12/2018 according to the information provided by public administrations.

By government level, we find a greater use of open procedures at the state level than at the autonomous community and local level (Graph 6). **During this period, autonomous communities use open procedures less frequently, in both in terms of the volume of procedures and their value.** Specifically, during the analysed period, 48.4% of autonomous community contracts are awarded through open procedures, while this percentage rises to 48.7% in the case of

³⁶ Notice that, in the case of contracts subject to the TRLCSP, the open procedure is, along with the restricted procedure, an ordinary procedure (art. 138.2 TRLCSP), while the negotiated procedure is exceptional, as the law defines the cases in which it can be used (arts. 170 et seq.).

local contracts and to 53.9% in the case of State contracts. In terms of the value of the contracts, 67.9% of the total budget for public procurement of autonomous communities is allocated through open procedures. This is the case for 75.1% of the respective state budget and 82.7% of the budget of local entities.

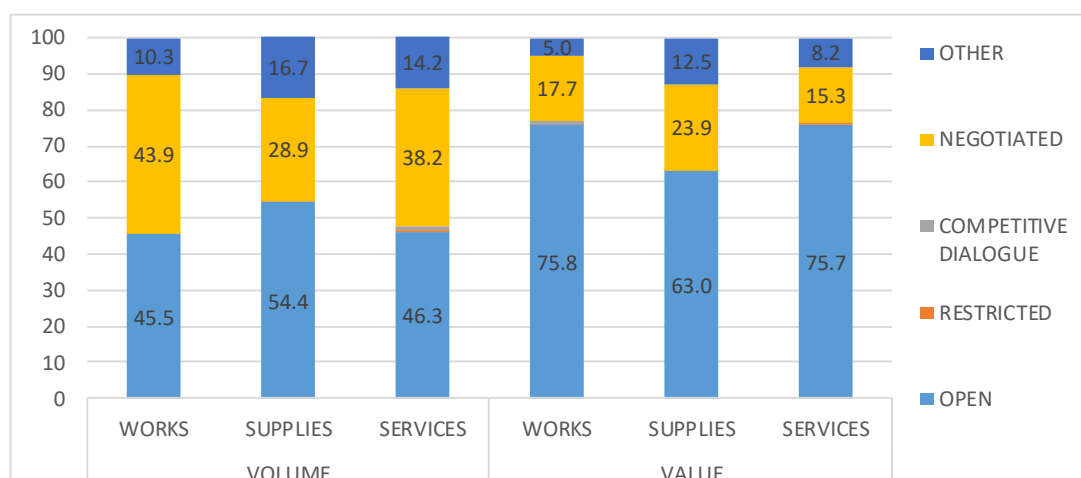
**Graph 6. Average percentage of open procedures by government level.
2012–2016**



Source: information provided by the Public Sector Contracts Register. Provisional data as of 19/12/2018 according to the information provided by public administrations.

When analysing simultaneously the procedure and contract type (Graph 7), we find that contracts for works are the ones where the open procedure is used least often (in 45.5% of cases), followed by contracts for services (46.3% of contracts) and lastly, contracts for supplies (in 54.4% of cases). In terms of value, we find the opposite, as it is works and services contracts where the open procedure is most often used, in 75.8% and 75.7% of cases, respectively, while in contracts for supplies, its use drops to 63%.

Graph 7. Use of award procedures by contract type. 2012–2016

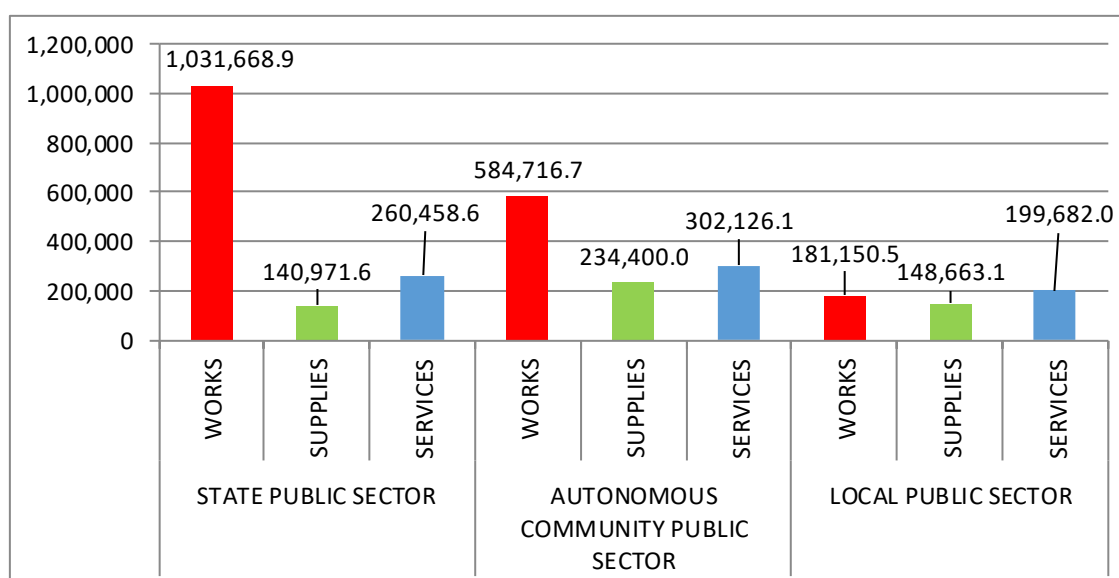


NB: The 'Other' category includes those contracts in which the reporting party chooses this option or does not indicate any award procedure.

Source: information provided by the Public Sector Contracts Register. Provisional data as of 19/12/2018 according to the information provided by public administrations.

In terms of the value of the contracts, the data shows (Graph 8) that the average value of works contracts in the state public sector is greater than at the other levels of government. In the case of supplies and services contracts, the average amount paid by the autonomous communities is higher than the average amount paid by the state and local public sector.

Graph 8. Average value of contracts by government level. 2012–2016



Source: information provided by the Public Sector Contracts Register. Provisional data as of 19/12/2018 according to the information provided by public administrations.

III. QUANTITATIVE ANALYSIS OF PUBLIC PROCUREMENT PROCEDURES

III.1. Descriptive data for procurement procedures

III.1.1. Study sample

In order to perform the analysis shown below, the CNMC used information from the different tenders published on the Public Sector Procurement Platform, the Ministry of Finance Centralised Procurement Portal and some autonomous communities' procurement platforms.

However, the analysis performed revealed that the information published on autonomous communities' procurement platforms sometimes include unstructured data, which are difficult to work with statistically. Therefore, in order to ensure uniformity and comparable information, only those contracts from either the Public Sector Procurement Platform or the Ministry of Finance Centralised Procurement Portal have been considered³⁷.

The Public Sector Procurement Platform and Ministry of Finance Centralised Procurement Portal include tenders for the state public sector, as well as tenders for the local and regional governments. However, in the case of contracts at the local or regional level, it is likely the existence of a sample bias: the percentage (in terms of number and value) of open procedures in the sample, published on platforms from autonomous communities' and local contracting bodies, differs from the available information in the Public Sector Contracts Register. This bias does not occur at the state level, where the percentage of open procedures in the sample, in terms of number and value, is very similar to that percentage in the register³⁸. Applying a precautionary principle, and in order to ensure that the results obtained are representative of the population, the analysis has concentrated on procurement procedures at the state public sector level³⁹.

³⁷ Notice that **the number of tenders published on the procurement platforms is well below the total of tenders**. Studies by Transparency International Spain and the Public Procurement Observatory on the publication of contracts and tenders on the Public Sector Procurement Platform (<https://transparencia.org.es/informe-sobre-cumplimiento-por-las-instituciones-publicas-de-la-normativa-legal-sobre-contratos/>) have identified a low level of compliance by some public entities. The most recent data available, as of May 2017, shows that just 51% of the councils and 59% of the autonomous communities comply with the obligation to publish their calls for tenders and their results on the procurement platform.

³⁸ Further details in [Appendix III](#).

³⁹ Lots in which the contracting body is part of the General Administration of the State or central government bodies are considered.

Additionally, the sample excludes minor contracts, with the aim of achieving greater uniformity⁴⁰. Contracts from framework agreements are neither included, provided that it is not possible to determine the procurement procedure used from the information published on the Public Sector Procurement Platform or the Ministry of Finance Centralised Procurement Portal⁴¹. The same criteria applies to in-house providing procedures, which are not included because information on their use is not available in the data sources⁴².

After the aforementioned sample selection process, it was necessary to make some additional adjustments to perform the econometric analysis. Firstly, the analysis has been limited to the period 2012–2017, as a large part of the tenders published in 2018 have not yet been awarded. Additionally, there was a major regulatory change (the entry into force of the new LCSP in March 2018) which could affect the results. Secondly, those tenders that have not been awarded for the 2012–2017 period were eliminated from the sample, as they do not contain either the winning bid or the number of bidders, which are fundamental variables for the analysis.

Some tenders are divided into lots, according to Article 86 of the TRLCSP, and such division is allowed if lots may either be used or utilised separately and constitute one functional unit on their own or such division is required by the nature of the object of the contract. For this reason, the lot was selected as the unit of analysis, and in those cases in which the tender is not divided into lots, the

⁴⁰ As indicated in paragraph II.1, for these contracts, the award of the contract is exempt from the majority of the record-keeping requirements and all those related to award procedures. The new LCSP has limited their use.

⁴¹ Numerous reports (INF) on draft tender requirements for centralised procurement, analysed by the CNMC, have stressed the need for a single platform for publication of framework agreements and the respective contracts based on these. For example, [INF/CNMC/072/17](#) regarding framework agreement 8/2016 for the supply of security systems and elements. The remaining reports and other CNMC actions concerning public contracting may be found at [‘Public procurement recommendations’](#).

⁴² With regard to in-house providing (*encargos*), it should be taken into account that this type of legal transaction between the awarding authority and its in-house resource – understood as a public sector entity of an administrative or mercantile nature, created for the purpose by the former – are considered non-contractual in nature. Consequently, as these are internal or instrumental relationships between an awarding authority and its in-house resource, they fall outside the general rule of bidding to which procedures for awarding public contracts are subject. For this reason, from the perspective of competition, the key characteristic of this figure is its direct nature, that is, its removal from public tender procedures, and therefore, from competitive bidding, as it is the case of minor contracts. In fact, in-house providing resources have been the object of analysis by competition authorities – and other supervisory bodies – due to their non-competitive nature, intensive use and the lack of transparency. See, for instance, the [study by the CNC](#) (now the CNMC) “Los medios propios y las encomiendas de gestión: implicaciones de su uso desde la óptica de la promoción de la competencia” (2013).

whole tender is considered as one lot. These criteria provided an initial sample of 88,531 lots.

Those lots that, due to error or omission, do not contain information about the key variables were removed from the data set. Specifically, there exist 25,767 lots with missing or null values for the lot price, award price or number of participants⁴³, which are excluded from the study. Additionally, 4,741 lots for which inconsistencies were detected with regard to the prices (the award price is higher than the lot price, the award price is greater than the estimated value of the contract or there is a possible error) were eliminated.

Additionally, those corresponding to regional and local governments' procurement were removed from the sample due to the lack of representativity of this subsample as mentioned earlier. Therefore, after filtering, the final sample available for the econometric analysis consists of 35,907 lots.

This data set includes substantial information about a large number of tenders for the 2012–2017 period. Specifically, it includes the following variables used in the analysis (described in Appendix II): contracting body (parent and subsidiary), contract type, procurement procedure, type of processing, CPV code of the object of the contract, tender status, result of the tender, funding programme, estimated value of the contract, bidding and lot price, award price and number of bidders.

III.1.2. Descriptive analysis of the sample

From the final selected sample⁴⁴, it is possible to draw the following conclusions:

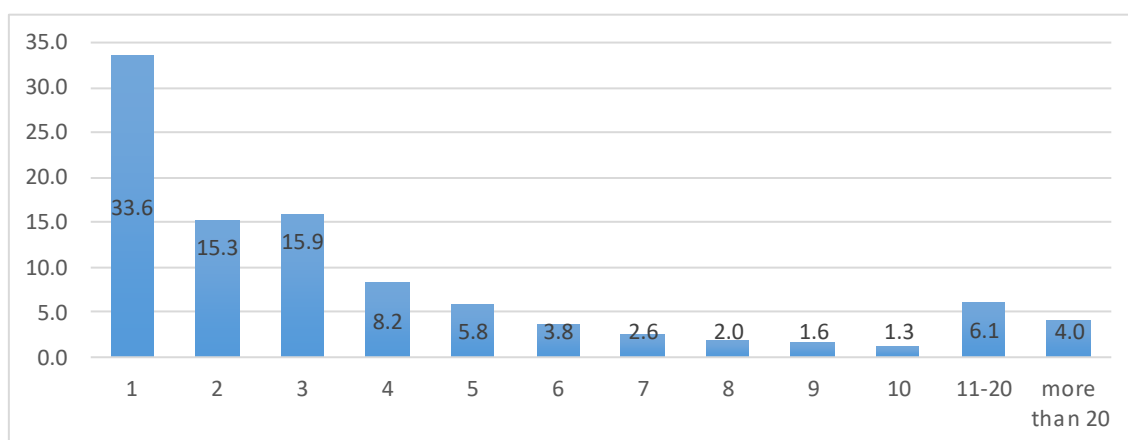
1. Number of participants

Data show (Graph 9) that **competitive intensity is weak in state public sector procurement procedures: 33.6% of the tenders there is only one bidder**, in 15.3% of the tenders there are two bids, and three bids in 15.9% of cases. **In just 35.3% of the lots is the number of participants higher than or equal to four.**

⁴³ The variable most commonly affected by the lack of information is the number of participants. In the samples analysed, this variable has almost 19,000 missing values.

⁴⁴ Outliers (atypical data points) have also been removed from this data set.

Graph 9. Distribution of number of participants by lot. 2012–2017



Source: compiled by author from the sample data set (state level).

The average number of participants per lot varies considerably depending on the contract type, procedure type and contracting body. For example, by contract type, there is an average of 12.2 bidders for a works contract while the number of participants drops to 4.5 bidders for a service contract and 2.6 bidders for a supply contract⁴⁵.

We also find that in contracts with higher budgets there are more bidders. Specifically, in the first decile of lot budget, the average number of participants is 2.5 firms, whereas in the last decile, average participation rises to 10.8 firms⁴⁶.

If the analysis is done by procedure type, we find that the number of bidders is higher in open procedures, as expected due to the quantity and regulatory requirements, with an average of 7 bidders. For negotiated procedures with notice, average number of participants is 3.8 and 2.3 for negotiated without notice⁴⁷.

2. Contracts with a single participant

Single bidding contracts have been analysed in more detail in order to identify the reasons for the lack of competition.

As Graph 10 shows, these contracts are primarily awarded by means of non-open procedures. These procedures are also frequent in cases with 2 and 3

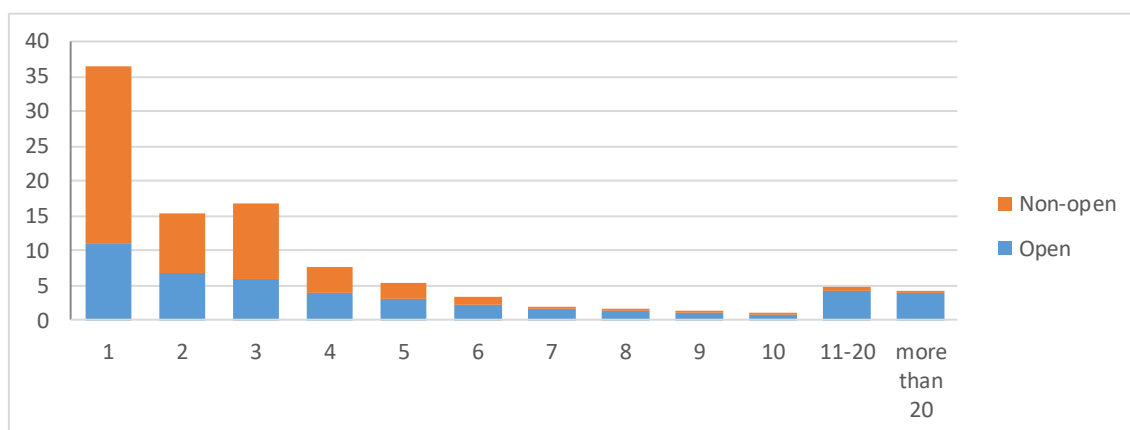
⁴⁵ When data are very heterogeneous and the existence of extreme values is very likely, as in this case, it is more advisable to use the median rather than the mean. In our data set, the median number of participants for works contracts is 6 bidders, while for service contracts it drops to 3 firms, and 2 firms for supply contracts. Only those types of procedures with a higher representativity in the sample (supply, service and works) have been considered.

⁴⁶ The median number of participants in the first decile is 2, whereas in the last decile it is 4.

⁴⁷ The median number of participants in open procedures is 4 bidders, 3 bidders for negotiated with notice, and 2 bidders for negotiated procedures without notice.

bidders. In contracts with a single participant, the negotiated procedure without notice is used in 61.2% of the cases, and the open procedure is used in 32.4% of the cases.

Graph 10. Distribution of the number of participants by award procedure. 2012–2017



Source: compiled by author based on the study sample data (state level).

In general, we observe (Table 1) that contracts with a single participant are usually contracts for small amounts. Thus, in the case of negotiated contracts without notice, the median budget is close to €59,000; for negotiated contracts with notice, it is €80,000; and for open contracts, the median totals €121,776.80.

Table 1. Median contract budget (contracts with a single participant) by procedure type. 2012–2017

Procedure type	Median contract budget (euros)
Open	121,776.80
Negotiated without notice	80,000
Negotiated with notice	58,680.80
Restricted	278,793.90

NB: data for the median contract budget is used as the mean is highly affected by extreme values.

Source: compiled by author based on the study sample data (state level).

The contracting bodies that most frequently have contracts with a single participant (Table 2) are those in the areas of defence⁴⁸, culture, the AEAT (State

⁴⁸ Notice that the specific regulation governing contracts in defence and security areas ([Act 24/2011](#)) establishes the negotiated procedure with notice as ordinary, which explains its frequent usage. Likewise, due to the special characteristics of certain procurements in these areas, for technical reasons, the negotiated procedure without notice is a procedure frequently

Tax Administration Agency) and the IMSERSO (Institute for Older Persons and Social Services).

Table 2. Contracting bodies that most frequently have contracts with a single participant. 2012–2017.

Parent contracting authority	Percentage
Army	18.1
Air Force	7.2
Navy	5.1
State Secretariat of Defence	5.0
Ministry of Defence	3.9
State Secretariat of Culture	3.0
Subsecretariat of Defence	2.8
State Tax Administration Agency	2.5
General Secretariat of Prison Institutions	2.5
Institute for the Elderly and Social Services	2.3

Source: compiled by the authors based on the study sample data (state level).

In particular, contracting bodies in defence mainly have a single firm in contracts whose object is: repair and maintenance services (CPV 50), security, fire-fighting, police and defence equipment (CPV 35), IT services (CPV 72), transport equipment and auxiliary products to transportation (CPV 34), and medical equipment, pharmaceuticals and personal care products (CPV 33).

used. Although it is necessary to invite at least three candidates in negotiated procedures, there will be cases where this is not possible due to market conditions, as the law envisages. Likewise, in other areas, such as culture and social services, that present some particular features, including the existence of exclusive rights or bidding reserves, there is a lower number of bidders.

Table 3. Defence contracts with a single participant by object of the contract. 2012–2017.

	Subject of the contract (CPV)	Frequency
50	Repair and maintenance services	17.7
35	Security, fire-fighting, police and defence equipment	9.8
72	IT services: consulting, software development, Internet and support	7.3
34	Transport equipment and auxiliary products to transportation	6.5
33	Medical equipments, pharmaceuticals and personal care	6.2

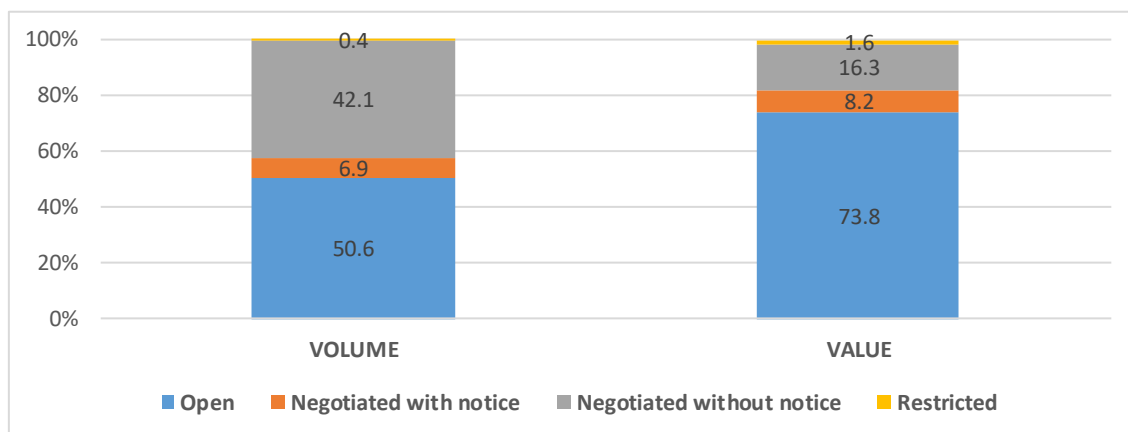
NB: frequency of occurrence is calculated over the total number of defence contracts.

Source: compiled by author based on the study sample data (state level).

3. Use of procurement procedures

Regarding the type of procurement procedure, we find that **the most used tendering mechanisms during this period are open (50.6% of lots) and negotiated without notice (42.1% of cases)**. Negotiated contracts with notice are used in 6.9% of the cases, restricted in 0.4% and competitive dialogue in 0.01%. In terms of value of the contract, the most common procedure is open (73.8% of lots), followed by negotiated without notice (16.3% of lots) and negotiated with notice (8.2%). The restricted procedure is used in 1.6% of contracts and competitive dialogue in 0.04% (Graph 11).

Graph 11. Frequency of use of procurement procedures. 2012–2017

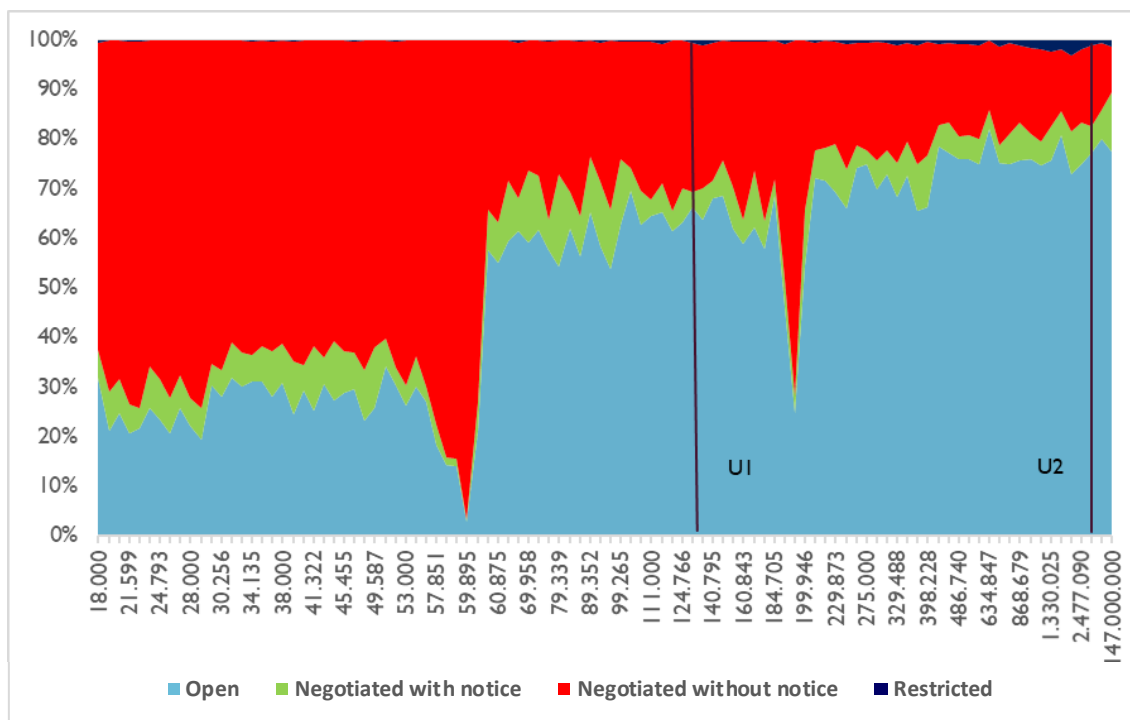


NB: the competitive dialogue procedure is not shown due to its limited occurrence.

Source: compiled by author based on the study sample data (state level).

It is also of interest to show the distribution of the different procurement procedures by percentile⁴⁹ (Graph 12).

Graph 12. Distribution of procurement procedure by lot budget percentile. 2012–2017



NB: the competitive dialogue procedure is not shown due to its limited occurrence.

Source: compiled by author based on the study sample data (state level).

Based on this graph, it is possible to highlight several facts:

- Firstly, we find that many of the contracts are contracts for small amounts⁵⁰.
- Secondly, **in contracts for small amounts, the negotiated contract without notice is the most frequently used**, whereas in contracts for large amounts, it is the open procedure.
- Thirdly, the frequency of use of the restricted procedure and negotiated procedure with notice is relatively constant across the different percentiles, although in the case of the restricted procedure, we may observe an increase in the usage of this procedure as the contract price rises.

⁴⁹ Percentiles are the 99 values that divide a dataset into 100 equal parts. For example, the 20th percentile is the value to the left of which lie 20% of the sample data, whereas the 50th percentile (or median) is the value to the left of which lie 50% of the sample data, that is, the value that divides the sample in two equal parts.

⁵⁰ Specifically, the 50th percentile, below which lie half of the contracts, is at €92,389.

- Fourthly, it is important to note the existence of a **threshold effect at 60,000 and at 200,000 euros**. According to the TRLCSP, it is possible to utilise the negotiated procedure without prior publication of the tender notice, among other circumstances, in those cases where the service or supply contract does not exceed €60,000 and a works contracts that does not exceed €200,000⁵¹. In the graph above, we find that **almost 100% of the contracts for amounts between 59,500 and 60,000 euros are awarded using the negotiated procedure without notice. This is true for approximately 70% of the contracts for amounts ranging from 199,500 to 200,000 euros**.

This graph also allows a comparison between data from the CNMC sample and data from TED. The graph shows the harmonised threshold for service and supply contracts (U1) and for works contracts and public works contracts (U2) above which publication of the calls for tenders on TED is compulsory. In Spain, the majority of tenders on TED make use of open procedures, which generally attract a higher number of participants than contracts for smaller amounts. Therefore, one of the advantages of the CNMC sample in comparison with TED is that the former contains all type of contracts⁵².

After analysing the distribution of the different procurement procedures depending on their amount, it is also useful to identify in which areas negotiated procedures without notice and open procedures are more frequently used.

- In the case of negotiated contracts without notice, classified by the CPV of the object of the contract, we find that 13.4% of them are devoted to repair and maintenance services (CPV 50), 13.3% to construction work (CPV 45), 7.5% to IT services such as consulting, software development (CPV 72), and 4.7% to laboratory, optical and precision equipment (CPV 38).
- Open procedures, however, are more frequently used for construction work (CPV 45), 12.8%; business services: law, marketing, consulting, recruitment (CPV 79), 8.5%; architectural, construction, engineering and inspection services (CPV 71), 7.34%; sewage, refuse, cleaning and environmental services (CPV 90), 7.0%.

⁵¹ In order to prevent the lack of transparency associated to the negotiated procedure without notice in contracts for amounts below certain thresholds, this procedure was eliminated in the new Public Sector Contracts Act, creating, as an alternative, a simplified process for the open procedure. This legal change was considered as very positive by the CNMC in IPN/CNMC/10/15.

⁵² According to an estimate by Gamir (2015), in Spain, the percentage of contracts (including the state, regional and local levels) whose value is below the harmonised thresholds, and therefore not published on TED, is an average of 83.8% for the years 2010, 2011 and 2012.

3. Award prices

A fundamental variable for economic efficiency is the award price, which is the price of the winning bid for the contract. In the economic literature, when analysing winning bids in public tenders, it is common to use the award coefficient, which is the ratio of the award price to the tender price⁵³, or the complementary, the discount over the tender price. A value of 80% for the award coefficient means that the winning firm has offered a discount of 20% on the tender price.

According to the sample data, the average discount tends to higher as the number of participants increases: for lots with a single participant, the average discount is 3.3%; if the total participants are three operators, then the average discount increases to 12.2%; with 6 participants, the average discount comes to 20.2%; and for lots with 10 bidders, the average discount is 27.1%.

Likewise, it is also useful to analyse the variation in the average winning discount depending on the type of procurement procedure. Table 1 shows the number of participants per lot, the award coefficient and the winning discount by type of procedure. We may observe that, in open procedures, the average number of participants is higher while the average award coefficient is lower and the average winning discount higher than in negotiated procedures.

In particular, **in the open procedure price competition is the strongest, with a 17.2% discount and an average of 7 participants, whereas in the negotiated procedure without notice, competitive pressure is the weakest as shown in the table (2.3 participants), presenting the lowest average discount (8.0%).** If we compare the two types of negotiated procedures, we find that the negotiated procedure with notice has a discount 4.4 percentage points higher than the negotiated procedure without notice.

⁵³ The tender price is the maximum price the contracting body is willing to pay for the contract (for example, 1 million euros to build a section of the AVE high-speed rail). The award price is the winning price for the tender, that is, the estimated cost of performing the contract for winning firm (for example, 800,000 euros).

Table 4. Average number of participants, average award coefficient and average winning discount by type of procedure. 2012–2017

Procedure type	Average Number of Participants	Average Award Coefficient	Average Winning Discount
Open	7.0	82.8	17.2
Restricted	7.7	86.5	13.5
Negotiated with notice	3.8	87.6	12.4
Negotiated without notice	2.3	92.0	8.0

NB: competitive dialogue has been eliminated from the table due to its limited occurrence.
Source: compiled by author based on the study sample data (state level).

III.2. Econometric analysis of the data

III.2.1. Review of the related literature

Empirical analysis of public procurement from the perspective of competition is relatively limited, primarily due to lack of available data.

Existing empirical studies have primarily focused on evaluating the **level of competition in public procurement depending on the number of bidders** in the tender.

- Of note is the pioneering analysis by Brannman et al. (1987), who show that a higher number of competitors results in lower bids and, under standard conditions, increased competition in a tender induces firms to reveal their true costs.
- The research in Gupta (2002) focuses on the highway construction market in Florida and concludes that the market becomes competitive when the number of bidders is between six and eight firms. The study estimates that an increase from two to six participants is translated into an average savings of between 9% and 10%, while this savings is between 12% and 14% when the number of participants increases from two to eight firms.
- In line with this, Estache and Iimi (2008) calculate the number of suppliers necessary for a tender process to be sufficiently competitive in three specific infrastructure sectors: road construction, sanitation and water, and energy. They determine that road construction projects and those in the sanitation and water sector require at least seven firms per tender to be sufficiently competitive. However, in the electricity sector, three firms per tender are necessary, although the authors emphasize that the latter result is less conclusive.
- On a more general basis, using the tendering register of the Turkish Public Procurement Authority, Onur et al. (2012) analyse competition in public procurement in Turkey between 2004 and 2006. According to the authors, each additional bidder reduces the final price of the tender by an average

of 3.9%. One interesting contribution of this last study is the analysis of the impact of opening up tendering to foreign participation. It is estimated that a tender process open to foreign bidders tends to reduce the cost of public procurement by approximately 10%.

Another significant line of analysis concentrates on **evaluating the impact of the type of award procedure on competition and economic efficiency**.

- From a theoretical perspective, the pioneering analysis by Bulow and Klemperer (1996) stands out. It supports the efficiency associated to open procedures and the drop in corruption.
- In the empirical field, mention should be made of Heijboer and Telgen (2002), who compare the total cost of a restricted procedure with that of an open procedure, showing that the cost of the optimal award procedure depends on the expected number of bidders, the distribution of their bids and the cost of evaluating such bids.
- For their part, Bajari et al. (2003) explore the differences between open and negotiated procedures in tendering for the private construction sector in North Carolina between 1995 and 2000. The analysis suggests that, in this area, open procedures perform more poorly when the project is complex, the contractual design is not complete and there is a low number of bidders.

It is also of interest to mention several articles that analyse **Spanish public procurement** from different points of view⁵⁴:

- On the one hand, it stands out the empirical analysis conducted by Ganuza (1997) who focuses on the problem of cost overruns in the major public works projects awarded by the Spanish State Government. The author performs a detailed analysis of cost overruns in contracts, concluding that their occurrence is a widespread phenomenon in Spain, affecting almost 80% of works contracts with budgets over 500 million pesetas⁵⁵. Using a Ministry of Public Works, Transport and Environment database, he studies the relationship between cost overruns and discounts in the different types of award procedure, concluding, among other things, that introducing competition into the tendering process produces an average savings of 14% over the tender price for works contracts. However, such savings disappears when cost overruns are included.

⁵⁴ Another interesting perspective is the study by Ferrando Gamir (2015), which examines the obstacles posed by corruption in Spanish public procurement. The author describes the Spanish procurement system, its structure, institutions and legislation, and presents an analytical discussion of the main cases of corruption that have occurred in Spain.

⁵⁵ Data for 1993.

- On the other hand, Sánchez-Graells (2011) studies minor contracts, which are not subject to a harmonised procedure, that is, those contracts whose price is below the thresholds mentioned earlier. The article emphasises the special rules that affect minor contracts and recommends a revision of the regulations for this type of tendering without notice, seeking an approach with a positive impact on the efficiency of Spanish public procurement.

III.2.2. Econometric analysis strategy

The overall aim of the analysis is to identify the effect of a more competitive environment on economic efficiency of public procurement. Specifically, we seek to isolate and quantitatively determine the effect that the type of procurement procedure chosen has on the level of competition in public procurement.

Economic efficiency in public procurement may be measured using different variables, among them, the cost or price the government pays to the firm that awarded the contract, the quality of the good or service contracted for or the time necessary to carry out the contract. There are no data available on the quality or the effective duration of the contract, so economic efficiency of public procurement is evaluated in terms of cost. An increase in competition result in more aggressive bidding among firms, which gives rise to higher discounts over the tender price and, as a result, a lower price to be paid by the government.

Following the economic literature discussed in the previous section (Bajari et al. (2003), Onur et al. (2012), Decarolis (2014), Coviello and Gagliarducci (2017), among others), in our model we estimate the economic efficiency of public procurement by means of an *ex ante* indicator, the ratio of the award price to the tender or lot price (the award coefficient)⁵⁶. Another option would be to consider this model in terms of the winning discount, a concept more commonly used in the terminology of procurement procedures⁵⁷.

$$WinningDiscount = \frac{LotPrice - AwardPrice}{LotPrice} \times 100$$

$$AwardCoefficient = \frac{AwardPrice}{LotPrice} \times 100$$

⁵⁶ One of the main advantages of this variable is that standardising the final price of the contract makes it possible to compare contracts of different types and periods

⁵⁷ The winning discount is measured in percentage terms with regard to the lot price. Thus, a winning discount of 10% indicates that the award price for the contract is 10% lower than the lot price.

The use of the winning discount or the award coefficient as indicators to estimate economic efficiency can pose the following problem: a discount over the estimated budget for the tender is not always translated into savings of the same amount for the government in the corresponding contract. Although the tender or lot price is an estimate of the market price⁵⁸, it may be the case that the difference between the award price and the lot price is explained by an incorrect estimation of the costs included in the tender budgets, especially if the discounts are considerable, as noted, for example, by the Court of Auditors on occasion⁵⁹.

Nonetheless, in our analysis, given the large sample size (35,907 observations), we assume that this indicator is suitable for the majority of the lots, although in some cases it may not be entirely suitable.

Furthermore, based on the evidence provided by the literature, the competitive environment is measured by the number of participants per lot (NUMPARTICIPANTS) and the type of award procedure. In this case, rather than considering the qualitative variable award procedure, a binary variable is used, OPEN, which takes the value 1 when the award procedure is open and 0 when it is not.

Additionally, several control variables are included, which permit to isolate significant sources of influence on the dependent variable. In particular, the aim of these variables is to control the heterogeneity of the data (contracts for very different amounts, involving different industries and awarded in different periods of time by different contracting bodies) using the variable logarithm of the lot price and a set of dichotomous variables relating to the object of the contract (classified according to their respective CPV), the subsidiary contracting body and the tender publication period (which refers to the month and year).

The working sample for this analysis is the representative sample determined in section III.1.1, which consists of the lots of those tenders awarded in 2012-2017 period by state contracting bodies.

Table 5 shows the descriptive statistics for our data. We observe that the average award coefficient is 87.03%, with a standard deviation of 15.61%. The minimum award coefficient is 25.69%, while the maximum is 100.00%. Depending on the type of contract, such coefficient varies considerably. Thus, the average award

⁵⁸ According to article 87 of the TRLCSP, '*contracting bodies shall ensure that the price is suitable for effective performance of the contract by properly estimating the amount, based on the general market price at the time the tender budget is set*'.

⁵⁹ In specific cases, when the award discounts reached percentages over 25%, the Court of Auditors considered that this because '*a correct estimate of the budget may not have been made or it may have been made without being adapted to market prices*'. See Report No. 1,165 on investigation of the contracts signed in 2013 by ministries, bodies and other dependent entities in the area of economic administration of the state.

coefficient for supply contracts is 92.14% (with a standard deviation of 12.46%), while for service contracts is 86.45% (with a standard deviation of 15.97%), and for works contracts is 75.28% (with a standard deviation of 15.26%).

Regarding the winning discount, we find an average of 12.97%. As in the case of the award coefficient, the value of the discount varies considerably depending on the type of contract. Appendix IV of the document shows the empirical distribution of the winning discount by contract type.

Table 5. Descriptive statistics. 2012–2017

Variable	Abbreviation	Average	tandard deviatric	Minimum	Maximum	Nº obs.
Award coefficient	AWDCOE	87.03	15.61	25.69	100.00	35,907
Works		75.28	15.26	28.45	100.00	4,312
Services		86.45	15.97	25.70	100.00	18,952
Supplies		92.14	12.46	29.71	100.00	11,901
Winning discount	DISC	12.97	15.61	0.00	74.30	35,907
Award price	AWDPR	507,880.70	2,963,990.00	6,916.10	1.44E+08	35,907
Lot Price	LOTPR	627,188.70	3,704,127.00	18,000.00	1.47E+08	35,907
Log(Log price)	LOG(LOTPR)	11.77	1.38	9.80	18.80	35,907
Number of participants	NUMPARTICIPANTS	4.82	7.51	1.00	102.00	35,907
Open procedure	OPEN	0.51	0.49	0	1	35,907
Subject of the contract	Binary variables representing the different CPVs					
Subsidiary authority	Binary variables representing the different subsidiary contracting authorities					
Months	Binary variables representing the different months between 2012 and 2017					

Source: compiled by the authors based on the study sample data (state level).

Also noteworthy is the significant variability of both the award price and the lot price (Table 5). The average award price is €507,880.70 (the median takes the value €81,691.20), with a standard deviation of €2,963,990, while the average lot price is €627,188.70 (the median takes the value €96,000), with a standard deviation of €3,704,127.

There is also significant variation in the number of participants. The minimum number of participants is 1, whereas the maximum totals 102 participants. For its part, the average number of participants is 4.82 and the standard deviation takes the value 7.51.

To estimate the effect of a more competitive environment on the economic efficiency of public contracting, the following model specification is considered:

$$\log(AWDCOE_{it}) = \beta_0 + \beta_1 NUMPARTICIPANTS_{it} + \beta_2 OPEN_{it} + \sum CONTROLS_{it} + \epsilon_{it}$$

where:

log(AWDCOE_{it}) is the logarithm of the ratio of the award price
to the lot price in period *t* (multiplied by 100)

In the case of the variable NUMPARTICIPANTS, it is expected that an increase in the number of participants would result in a decrease in the award coefficient. This is because, in general, a higher level of competition among operators leads to a lower perceived probability of winning the tender and encourages operators to adjust their costs more and offer a lower price. The same intuition holds for the variable OPEN since open procedures attract, on average, a higher number of participants than non-open procedures, which generates more intense bidding among participants, and as a result, a lower bidding price than in non-open procedures.

After the specification of the model, the first step is to investigate the possible existence of endogeneity. According to the empirical literature on procurement (Bajari and Hortaçsu (2003), Li and Perrigne (2003), Ohashi (2008), Estache and limi (2010), Onur and Velamuri (2011), Onur et al. (2012) and Tas (2015), among others), the endogeneity of the number of participants is one of the most important and complex problems for these models. Specifically, studies such as Estache and limi (2010) argue that, in public procurement models, there are many omitted explanatory variables, and some of them may simultaneously affect both participation in the tender and the award coefficient, making the variable number of participants to be determined endogenously.

A potential endogeneity problem is also expected in the variable open procedure, given that, as Onur et al. (2012) argue, it is the contracting body that selects the type of procedure, and certain factors that affect this decision may also affect the tender price and, as a result, the award coefficient, generating a potential endogeneity problem.

Therefore, the empirical strategy is the following: the proposed econometric model is estimated using ordinary least squares, and then, in order to evaluate and correct the possible endogeneity problem, two-stage least squares (2SLS) is used. The entire process is described in detail in Appendix V⁶⁰.

III.2.3. Results of the analysis

Table 6 shows the results of the estimation. The first column shows the estimators obtained using the ordinary least squares method, assuming that the explanatory variables are exogenous. The second column shows the results, corrected for endogeneity, estimated using 2SLS with the instruments HARMONISEDTHRESHOLD, ALAGNP, PEEREXPERIENCE and MINISTRY. In both cases, robust standard errors were used.

⁶⁰ [Appendix V](#) provides details of the instrumental variables selected for the estimation using two-stage least squares.

Results obtained provide evidence on the negative relationship between competition and the tender price to be paid by the public administration. In other words, **in contracts subject to a higher level of competition, the government tends to pay less, thus achieving greater economic efficiency.**

Hence, there exists a statistically significant negative relationship between the variable OPEN and the variable award coefficient (AWDCOE). In the estimation by two-stage least squares, the results show that, *ceteris paribus*, **the average price paid by the government in open procedures is 9.857% smaller than the average price paid when non-open procedures are used (negotiated, restricted and competitive dialogue).** The number of participants also has a statistically significant negative effect on the price paid by the government for the contract. In this case, **the participation of one additional firm in the tender entails an average reduction in the price of 2.133%.**

Table 6. Determinants of the award coefficient

Independent variable	OLS	2SLS
OPEN	-5.397*** (0.230)	-9.857*** (1.766)
NUMPARTICIPANTS	-0.973*** (0.024)	-2.133*** (0.350)
Num. Observations	35,907	35,907
R ²	0.416	0.289
Adjusted R ²	0.402	0.271

Note: * p<0.05; ** p<0.01; *** p<0.001.

In parentheses, robust standard errors.

Source: compiled by author based on the study sample data (state level).

Lastly, it should be emphasised that the adjustment of (adjusted R² equal to 27.1%) is fine, given the high variation in the data and the use of instrumental variables.

III.2.4. Analysis of the robustness of results

In order to ensure the robustness of the results, the model is estimated using two additional methods: the generalized method of moments (GMM) and the limited information maximum likelihood method (LIML). When the estimators obtained with the different methods (2SLS, GMM and LIML) are compared we find that they are very similar, which reinforces the robustness of the model (Table 7).

Table 7. Estimates obtained using different methods

Independent variable	2SLS	GMM	LIML
OPEN	-9.857*** (1.766)	-9.737*** (1.704)	-10.126*** (1.871)
NUMPARTICIPANTS	-2.133*** (0.350)	-2.012*** (0.333)	-2.199*** (0.377)
Num. Observations	35,907	35,907	35,907
R ²	0.289	0.212	0.274
Adjusted R ²	0.271	0.192	0.256

Remarks: * p<0.05; ** p<0.01; *** p<0.001.

In parentheses, the robust standard errors.

Source: compiled by author based on the study sample data (state level).

Additionally, considering the existence of significant differences between average award coefficients for the different types of contracts shown in Table 5, the model is estimated for each type of contract. The estimates are still significant and with the same negative sign for each contract type, reinforcing the robustness of the model. However, we may observe differences in their values: open procedures have a greater effect on the award coefficient in the case of works contracts, while the impact is smaller for service contracts and much less for supply contracts

As Table 8 shows, **the estimated cost in open procedures is almost 13% lower for works contracts, 7% lower for service contracts and 1.4% lower for supply contracts in comparison with non-open procedures.** Moreover, the participation of one additional firm results in a reduction in the price of the contact of almost 1% for works contracts, 0.7% for service contracts and approximately 2% for supply contracts.

Table 8. Determinants of the award coefficient by contract type

Independent variable	WORKS	SERVICE	SUPPLY
OPEN	-12.712*** (2.179)	-6.865*** (1.685)	-1.411*** (0.253)
NUMPARTICIPANTS	-0.989*** (2.329)	-0.706* (0.351)	-1.909*** (0.074)
Num. Observations	4,303	18,952	11,901
R ²	0.460	0.366	0.343
Adjusted R ²	0.411	0.338	0.309

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

In parentheses, standard errors robust to heteroscedasticity.

Estimation using 2SLS.

Source: compiled by author based on the study sample data (state level).

III.2.5. Estimation of potential savings from the use of open procurement procedures

The estimates obtained in the econometric analysis can be used to calculate the hypothetical savings that a systematic and exclusive use of the open procedure in procurement would have been generated for the public administration. This calculation is only a hypothetical exercise and probably not feasible in practice, since it is not possible to use the open procedure, due to the cost and time it entails, in every case in which this procedure was not originally chosen by the contracting authority, according to the rules of public procurement. Furthermore, this exercise present some limitations, as explained below that may lead to a considerable underestimation of the results. Despite these limitations, the calculation is still useful to compute the benefits from moving toward open procedures, improving the efficiency of public procurement in Spain.

The calculation of the savings is made using the following method: using the amounts devoted to non-open procedures broken down by contract type, provided by the Public Sector Contracts Register, and taking into account the estimates obtained by contract type of the variable Open (Table 8), savings from substituting the different procurement procedures with the open procedure are computed for the 2012–2016 period⁶¹.

It may be concluded that **if open procedures were to be used in all tenders included in the Public Sector Contracts Register at state level, the cost of**

⁶¹ The data from the Public Sector Contracts Register only allow us to analyse this period at the time the query was made by the CNMC.

public procurement would have been reduced in at least 440 million euros for the 2012–2016 period (specifically, €440,551,261.40). This means a hypothetical minimum potential savings of **88 million euros per year** (specifically, €88,110,252.28).

Furthermore, this analysis may be extrapolated to contracts from autonomous communities and local governments in order to approximate the hypothetical total potential savings from the use of open procedures in public procurement. In addition to the limitations of the calculations at state level, in this case, there is an added problem since the results of the econometric analysis are derived from a sample of contracts at the state level, and hence, there may be significant differences at regional and local level. In spite of all these limitations, we consider that the calculation may be useful to have an estimation of the benefits of improving the efficiency of public procurement in Spain.

Taking into account these limitations, the cost of public procurement for the public sector as a whole (state, autonomous community and local) is computed, and it would have been at least 1,771 million euros lower for the 2012–2016 period if open procedures had been used in all cases (specifically, €1,771,370,520.70), which means a minimum savings of **354 million euros per year** (specifically, €354,274,104.10).

It is important to remark that **these estimates are very conservative**. On the one hand, this is because, as explained throughout the report, the analysis performed does not include all forms of state public sector procurement (minor contracts, in-house providing and contracts based on framework agreements⁶²). On the other hand, although all public contracts are required to be registered with the Public Sector Contracts Register, it is unknown whether all contracts are in fact recorded, as there are no effective control procedures in place.

It should be noted that, as a whole, contracts included in the Public Sector Contracts Register amount to a total average of 23,369,218,148 euros a year, which represents around 2% of GDP, whereas, as stated at the start of this study, the various estimates calculate this share as 10.5% (OECD) and 20% (Public Procurement Observatory) of GDP. Hence, this would imply that **the calculations of the hypothetical potential savings are approximately five times less than the real ones**.

⁶² As mentioned before, generally, data on in-house providing and contracts based on framework agreements are not published.

IV. CONCLUSIONS

The importance of public procurement in Spain is unquestionable, in both quantitative and qualitative terms. It affects all markets and, as a result, prices, quality, productivity and the welfare of citizens.

Given the fundamental role of public procurement, and the limited public budget, it is crucial to improve the efficiency of public procurement by implementing pro-competitive regulation and procurement procedures. However, despite the legislative advances undertaken within the framework of the European Union, a number of national and international organisations have outlined the deficiencies of Spain's public procurement system in terms of both competition and efficiency. Therefore, there appears to be considerable margin for improvement.

In order to verify the existence of effective competition in government purchasing, and to assess the efficiency of use of public funds, an evaluation of the public procurement system should be performed. This analysis may only be carried out if accurate data are available.

The availability of data would improve our understanding of the functioning of Spanish public procurement, and help policy-makers verify the existence of competition in public tenders, detect eventual fraudulent tenders that harm both the government and tax-paying citizens, analyse the efficiency of government purchasing and increase transparency in the use of public funds.

A careful analysis of public procurement requires the availability of information that is both extensive and of high-quality, to ensure its accuracy and the validity of conclusions.

Additionally, it is crucial to simplify access to relevant information. **Until now, accessing Spanish public procurement data was complex and burdensome**, mainly due to the heterogeneity of information sources. The new Public Sector Contracts Act, in force since March 2018, is expected to simplify this task by introducing interconnectivity requirements between the platforms of the different government and public authorities, in order to set up a single platform centralising all public notices for public sector procurement.

Even if this problem is overcome, **there remains another fundamental factor hindering quantitative analysis in this area: data quality**. The information published on the different procurement platforms presents a number of inconsistencies and missing data that are not negligible. This makes the analysis considerably more difficult.

Looking ahead, the new Public Sector Contracts Act has introduced the obligation to publish tender notices on the platform, under penalty of nullity (art. 39 LCSP), raising expectations for future improvements in data quality. Furthermore, the act creates the Independent Office for Regulating and Monitoring Procurement,

which may play a significant role in improving data quality, and gives data analysis a prominent role in the National Public Procurement Strategy.

The descriptive analysis of public procurement presented in this study, under the considered assumptions and with the indicated limitations, provides the following relevant conclusions.

First, **the intensity of competition in public procurement is weak**, as revealed by the high percentage of tenders with a single participant (in almost 34% of state contracts there is a single participant, and in 66% of state contracts, there are 3 or fewer participants). Second, **the negotiated procedure without notice is used frequently in contracts for small amounts**, which represent a significant share of all contracts (50% of state contracts have a budget of less than €92,389). Third, we find significant **threshold effects at 60,000 and 200,000 euros** resulting from the use of the negotiated procedure without notice for contracts with slightly lower amounts.

The econometric analysis conducted in this study reveals that **the choice of the procurement procedure is not neutral in terms of the efficiency of public procurement awards, that is, in terms of cost.**

Specifically, there is a negative correlation between the choice of an open procedure (the most competitive of all) and the award price paid by the government for the tender: **the government pays, on average, 9.9% less in contracts for which an open procedure is used, rather than a non-open procedure (negotiated, restricted and competitive dialogue).** Regarding the number of participants, **the inclusion of one additional firm in a lot results in an average reduction of 2.1% in the price paid by the government.**

For purely illustrative purposes, we extrapolated these results to all contracts to estimate the hypothetical savings that would have resulted from the systematic and exclusive use of the open procedure in public procurement. Therefore, **if it had been possible to use open procedures in all tendering, the cost of public procurement would have been – as a minimum and using very conservative criteria – some 1.7 billion euros less for the 2012–2016 period.**

This estimate is only a hypothetical exercise and probably infeasible in practice, as it is not possible to implement an open procedure in every case in which this procedure has not been used by the contracting authority, according to the rules of public procurement. Nevertheless, it constitutes a point of reference to advance towards the objective of improving the efficiency of public procurement in Spain.

The results of the analysis do not mean that governments should systematically opt for open procedures to the detriment of non-open procedures (negotiated, restricted and competitive dialogue). The latter procedures are perfectly compatible with procurement regulations and should be used when justified by the characteristics of the contract. Furthermore, the analysis only evaluates the

cost of awarded contracts (not the final cost to the contracting authority) and leaves out the analysis of the quality dimension of the contract.

However, **it is important for public administrations to understand the cost of using less competitive procedures**, to improve their decision-making processes from the perspective of an efficient management of public funds. This highlights the importance of public authorities providing the reasons that justify the choice of less competitive procedures.

V. RECOMMENDATIONS

ONE. All public administrations should adhere to and participate in achieving the objective of **increasing the integration of the different databases for public sector contracts**, as required by the new Public Sector Contracts Act. Only by means of available high-quality data will it be possible to conduct a true evaluation to guide the improvement of public procurement in Spain.

TWO. All public administrations should adhere to and participate in the objective of **achieving a higher level of oversight in the accuracy and reliability of the information published** on the different procurement platforms. The availability of accurate data on public procurement in Spain will enable greater control over both public spending and existing competition conditions, and support the detection of possible restrictions of competition in the sphere of public procurement.

THREE. All public administrations should adhere to the objective achieving a more competitive public procurement in Spain. It is essential for government authorities to conduct **rigorous analyses of competitive conditions in the market before engaging in contracting**, and for them to perform **assessments of the efficiency of the contracts following their completion**. It is advisable for public administrations to follow the more specific recommendations of the CNMC for public procurement, particularly, the [Guide on Public Procurement and Competition \(2011\)](#).

FOUR. Public administrations should choose the most suitable procurement procedures regarding the specific circumstances of each contract. This choice should be based on a **detailed analysis of the advantages and disadvantages of each alternative procedure**, including the cost of opting for non-open procedures. The choice of **non-open procedures should be limited to those cases in which the loss of economic efficiency is compensated by other benefits**, which must be adequately detailed and documented.

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APPENDIX I. SINGLE MARKET SCOREBOARD FOR PUBLIC PROCUREMENT

The European Commission Single Market Scoreboard for public procurement consists of a table of indicators that reflect the performance of Member States on key aspects of public procurement. In 2017, a total of 12 individual indicators are considered⁶³.

Table 9. Single Market Scoreboard indicators for public procurement

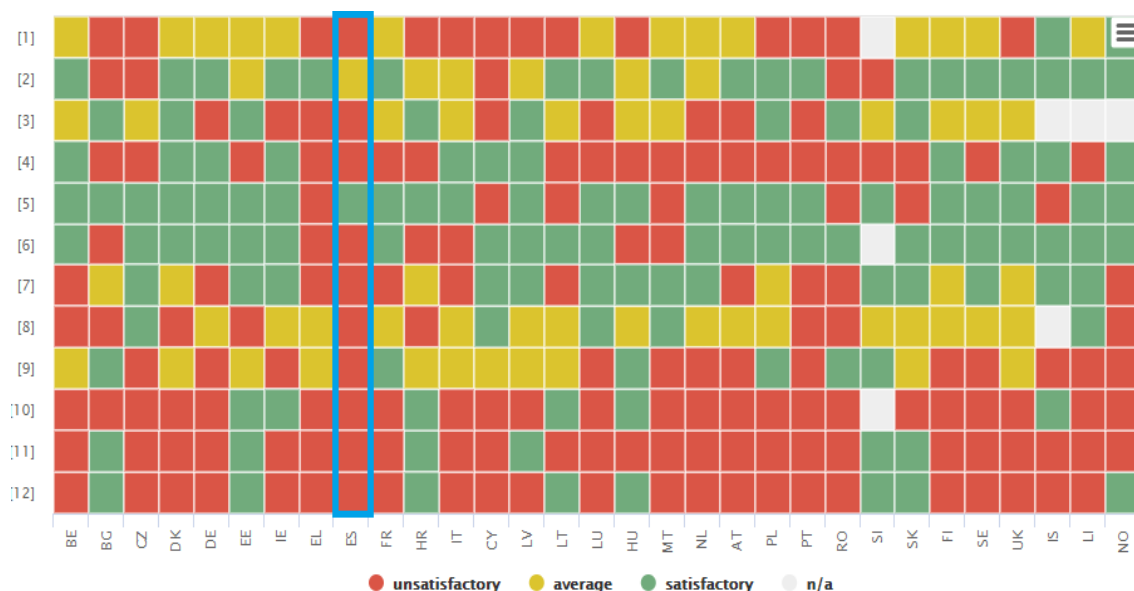
INDICATORS	WHAT THEY MEASURE
1. Presence of a single bidder: proportion of contracts awarded where there was just a single bidder.	COMPETITION AND BUREAUCRACY
2. No calls for bids: proportion of procurement procedures that were negotiated with a company without a call for bids	TRANSPARENCY AND COMPETITION
3. Publication rate: value of procurement advertised on TED as a proportion of national gross domestic product (GDP).	ACCESS AND OPENNESS OF PUBLIC PROCUREMENT MARKETS
4. Cooperative procurement: proportion of procurement procedures with more than one public buyer.	HOW OFTEN PUBLIC BUYERS BUY TOGETHER
5. Award criteria: proportion of procedures awarded only on the basis of lowest price.	HOW OFTEN AWARD DECISIONS ARE MADE BASED ON PRICE ALONE
6. Decision speed: mean decision-making period (the time between the deadline for receiving offers and the date the contract is awarded).	SPEED OF THE PUBLIC BUYERS' DECISION-MAKING
7. SME contractors: percentage of small and medium-sized enterprises awarded contracts.	PARTICIPATION OF SMES
8. SME bids: proportion of bids submitted by small and medium-sized enterprises.	PARTICIPATION OF SMES
9. Procedures divided into lots: proportion of tenders that have been divided into lots.	PARTICIPATION OF SMES
10. Missing calls for bids: proportion of awarded contracts for which it is not clear what the conditions were.	DATA QUALITY
11. Missing seller registration numbers: proportion of procedures where the registration number of a seller was not included.	DATA QUALITY
12. Missing buyer registration numbers: proportion of procedures where the registration number of the buyer was not included.	DATA QUALITY

Source: Single Market Scoreboard (Public Procurement).

The first three are the most important indicators, as they measure the central principles of good public procurement: competition, transparency and market access.

⁶³ The European Commission calculates these indicators based on tenders published on Tenders Electronic Daily (TED).

Graph 13. Performance of Member States in Single Market Scoreboard indicators. 2017



Source: European Commission.

This graph shows the performance of the different Member States in each one of the indicators. As mentioned earlier, Spain (ES) ranks among the lowest in public procurement, based on these indicators.

Specifically, it receives a poor score in the three main indicators: unsatisfactory performance in the presence of a single bidder indicator (indicator 1) and the publication rate indicator (indicator 3), and an average score in terms of transparency of the procedure (indicator 2). The Czech Republic (CZ) performs similarly in these three indicators, and Cyprus (CY) performs more poorly. The remaining states record better performances in these indicators.

In the rest of the indicators, Spain maintains its poor scores, with eight indicators at an unsatisfactory level and just one satisfactory performance, relating to award criteria (indicator 5)⁶⁴.

It is interesting to note, as showed by the graph, the overall poor performance of Member States in relation to data quality, with few exceptions, such as Estonia (EE) and Croatia (HR).

⁶⁴ It should be noted that not all the indicators have the same weight. Those that measure the same concept from different perspectives, such as the case of indicators 7–9 and 10–12, receive a one-third weighting. More details on the [Single Market Scoreboard](#) site for public procurement.

APPENDIX II. MAIN VARIABLES INCLUDED IN THE DATA SET

- Contracting authority: the entity authorised to enter into contracts within the scope of its powers and jurisdiction. A distinction is made between the 'subsidiary' contracting authority and the 'parent' contracting authority (organisational structure on which the former is dependent). The database includes contracts for the state and non-state public sector, including contracts arranged by the different ministries, autonomous bodies and other entities governed by public law.
- Contract type: type of contract defined by legislation, distinguishing between works, services, supplies, concessions for public works, management of public services, public-private partnerships, and others.
- Procurement procedure: type of procedure applied to award the contract. The procedure can be open, restricted, negotiated with notice, negotiated without notice or competitive dialogue.
- Type of processing: the procedure can be processed as ordinary, urgent or as an emergency.
- CPV code of the subject of the contract: the Common Procurement Vocabulary (CPV) is a single classification system for public contracts, compulsory in the European Union since 2006, which standardises the references used to describe the subject of procurement contracts.
- Tender status: situations which the tender passes through over the course of the procedure (prior information notice, out to tender, pending award, awarded, settled or cancelled).
- Outcome of the tender process: indicates whether the contract has been awarded, the contract has been performed, whether it was declared void, there was a withdrawal or it was abandoned.
- Funding programme: whether it was funded using European Union funds.
- Estimated value of the contract: total cost of the contract, not including value added tax, payable according to the estimates of the contracting authority, calculated as stipulated in article 88 of the consolidated text of the Public Sector Contracts Act (TRLCSP).
- Tender price: maximum price that can be paid to the contractor in exchange for the performance of the contract⁶⁵. Data on price is available with and without tax (VAT).
- Lot price: maximum price that can be paid to the contractor when the tender is divided into lots. For single-lot tenders, the tender price coincides with the lot price. Data on price is available with and without tax (VAT).
- Award price: price tendered by the successful tenderer which awarded the contract. Data on price is available with and without tax (VAT).

⁶⁵ According to article 87 of the TRLCSP, contracting bodies will be responsible for correctly estimating the tender price taking into account the general market price at the time the budget is set.

- Number of bidders that submit their bids on each lot or single-lot tender.

APPENDIX III. CONSISTENCY AND REPRESENTATIVENESS OF THE STUDY SAMPLE

The representativeness of the final sample⁶⁶ was verified in relation to the Public Sector Contracts Register (which is identified with the total population). Specifically, given the availability of comparable data, the representativeness of one of the fundamental variables of the analysis, the procedure type, was studied for the 2013–2016 period.

Table 10 shows the frequency with which the open procedure was used during this period for both the Public Sector Contracts Register and the sample. We can see that at the state level, this distribution is almost identical, in both volume and value. However, at the autonomous community and local level, the distribution in the two sources differs to a greater extent. In order to adopt a conservative approach, the analysis carried out in the remainder of the document is limited to the state level, it being possible to replicate this analysis for the autonomous community and local level at a future time.

Table 10. Comparison between the analysed sample and the Public Sector Contracts Register. 2013–2016

2013-2016	% OPEN PROCEDURES (VOLUME)		% OPEN PROCEDURES (VALUE)	
	Register	Study sample	Register	Study sample
State	54.2	51.3	76.0	75.1
Autonomous community	48.1	54.3	70.8	62.1
Local	49.3	59.5	85.1	81.5

Source: Public Sector Contracts Register and author's compilation.

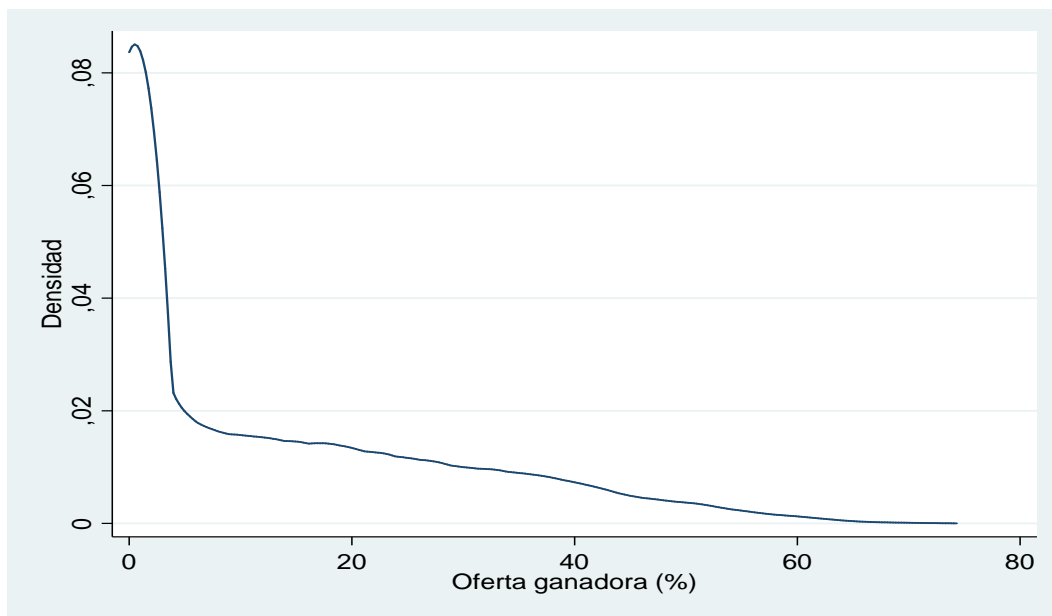
NB: The table is adjusted to the period and available data in the Public Sector Contracts Register (<http://www.minhfp.gob.es/es-ES/Servicios/Contratacion/Junta%20Consultiva%20de%20Contratacion%20Administrativa/Paginas/Registro%20publico%20de%20contratos.aspx>).

In this analysis, it would have been ideal to confirm the representativeness of the variable number of participants. However, this information is not available in the Public Contracts Register.

⁶⁶ After removing the lots with errors and missing values.

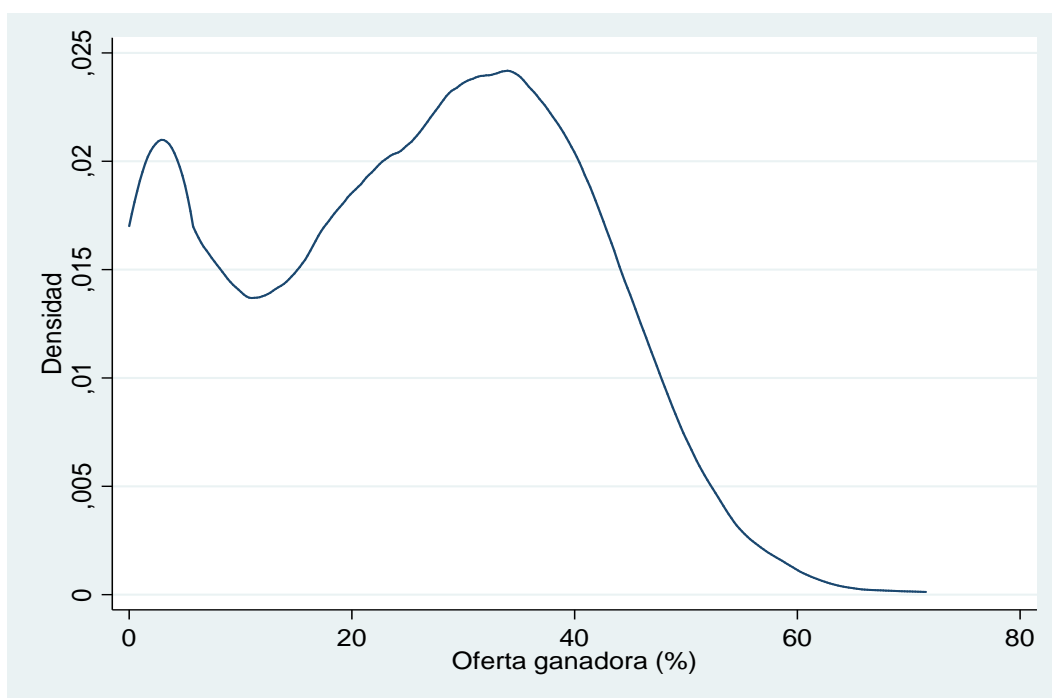
APPENDIX IV. EMPIRICAL DISTRIBUTION OF THE WINNING DISCOUNT BY CONTRACT TYPE

Graph 14. Empirical distribution of the winning discount for all contracts. 2012–2017 period



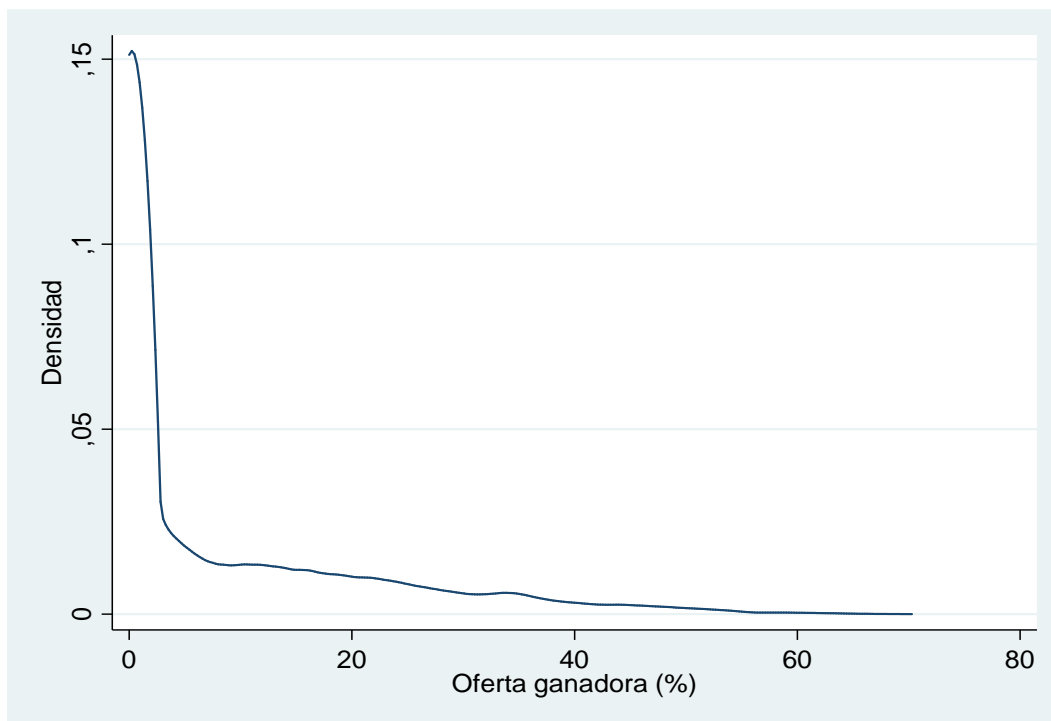
NB: Density (y-axis), winning bid (%) (x-axis).

Graph 15. Empirical distribution of the winning discount for works contracts. 2012–2017 period



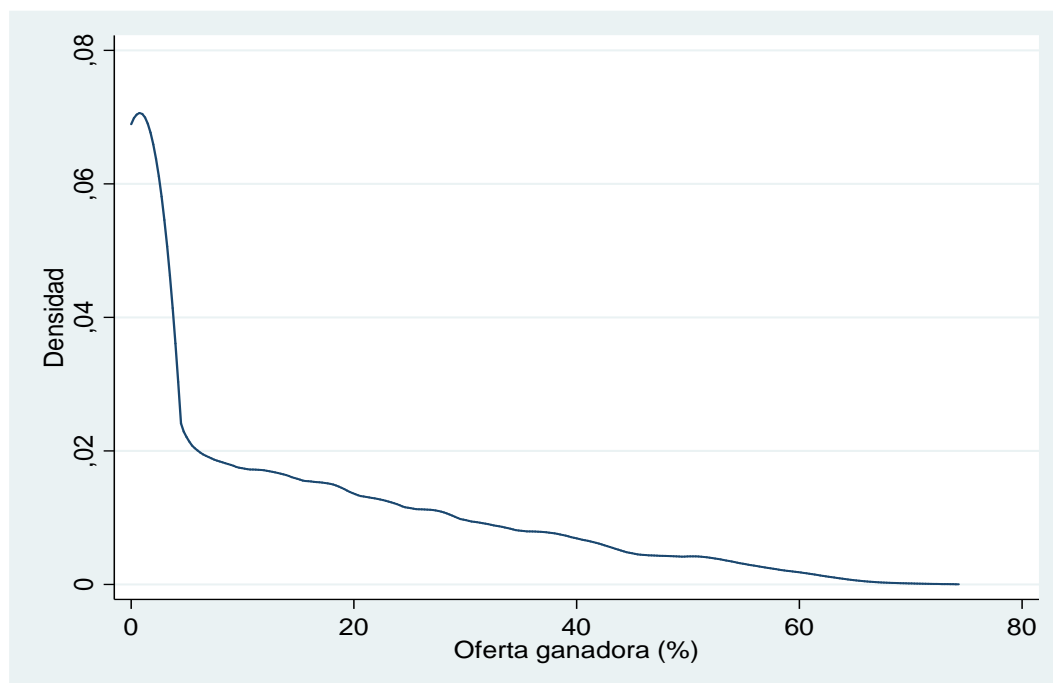
NB: Density (y-axis), winning bid (%) (x-axis).

Graph 16. Empirical distribution of the winning discount for supply contracts. 2012–2017 period



NB: Density (y-axis), winning bid (%) (x-axis).

Graph 17. Empirical distribution of the winning discount for service contracts. 2012–2017 period



NB: Density (y-axis), winning bid (%) (x-axis).

APPENDIX V. SELECTION OF INSTRUMENTAL VARIABLES

Estimation using instrumental variables is especially complex due to the difficulty of finding suitable instruments. For each variable with suspected endogeneity issues, it is necessary to find at least one other variable (the instrument) which is sufficiently correlated with it and which is also exogenous, in other words, not correlated with the error term. In our case, rather than just two instrumental variables, it is highly advisable to find a larger number of instruments for variables OPEN and NUMPARTICIPANTS. If we have more instrumental variables than endogenous variables, it is possible to check the exogeneity of the instrument using a test, which increases the confidence of the result obtained.

We construct the following four variables, which are regarded as potential instruments. HARMONISEDTHRESHOLD, ALAGNP, PEEREXPERIENCE and MINISTRY.

- The HARMONISEDTHRESHOLD variable is a dichotomous variable which takes the value 1 when the lot budget exceeds the harmonised threshold set by Regulation 1177/2009 and which requires compulsory publication on the TED portal. According to Graph 4, this variable could be a good instrument for the OPEN variable and also for the NUMPARTICIPANTS variable, given that publication on the TED portal provides more publicity for the tender.
- For its part, the ALAGNP variable measures the average number of participants registered by the respective subsidiary contracting authority during the previous period (if this value is null, we use the average number of participants for the parent contracting authority on which the subsidiary contracting authority under consideration is dependent). This variable is proposed as an instrument for the variable NUMPARTICIPANTS.
- We frequently see some spillover effects in the sphere of procurement: different departments within the same organisation communicate with one another and share procurement practices. As a result, the award procedure chosen by a contracting authority may be influenced by past choices of the same organisation in other areas of procurement. The PEEREXPERIENCE variable measures the frequency with which other contracting authorities within the same organisation have used the open procedure during previous periods and it is used as an instrumental variable for the OPEN variable.
- The MINISTRY variable is a dichotomous variable that takes the value 1 when the contracting authority is part of a ministry and 0 otherwise. Based on the information contained in the sample, we find that contracting bodies which are part of ministries use open procedures more frequently than

those which are part of other organisations⁶⁷. Therefore, this variable may be used as an instrumental variable for the OPEN variable. Additionally, it may be a suitable instrument for the NUMPARTICIPANTS variable, as it seems feasible that tender processes organised by a ministry obtain greater visibility than those organised by other bodies.

In a later stage, we check the suitability of these instrumental variables analysing their exogeneity and relevance.

As the model is overidentified, the Sargan–Hansen test can be used to check the exogeneity of the instrumental variables. In this case, the test is not significant, which ensures that the instrumental variables considered are exogenous.

Additionally, a Stock and Yogo (2005) test was used to check that the instruments are not weak. The instruments selected exceed the critical values established by these authors. Specifically, the statistic used to test the weakness of the instruments takes the value 22.78, above the highest critical value (16.87).

Finally, we check the endogeneity of the NUMPARTICIPANTS and OPEN variables, as assumed in the proposed model. The significance of Wooldridge's robust test makes it possible to reject the null hypothesis of exogeneity, thus confirming that these two explanatory variables are endogenous variables.

⁶⁷ According to the information contained in the sample, open procedures are used 57.2% of the time by contracting authorities that are part of ministries and 49.9% of the time by contracting authorities that are not part of ministries.