JOINT BIDDING IN PROCUREMENT

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ABSTRACT. Joint bidding is the practice of two or more independent suppliers submitting a single bid. In Europe, the regulation of joint bidding in procurement varies a lot across countries, and is in several cases related to the inability of an individual firm to be admitted as a solo bidder. In the first part of the paper we analyse the basic economics of bidding consortia and the effects that these can have in terms of coordination among firms, risk management and exploitation of synergies. In the second part we compare several practical criteria for limiting bidding consortia in a consistent way by assessing their relative degrees of restrictiveness.

INTRODUCTION

Joint bidding, be it in auctions or in procurement tendering, is the practice of two or more similar firms submitting a single bid. Bidding consortia among potential competitors, whether or not temporary, were customary in auctions for offshore leases and are currently observed in procurement.[i] In late 1975, however, the U.S. Department of the Interior forbade the eight largest crude-oil producers worldwide to submit joint

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bids for outer continental shelves leases. The presumption was that joint bidding aimed at lowering prices, thus harming competition. Bidding consortia were then considered price-fixing devices. In Europe, the regulation of joint bidding in procurement varies across countries. It is in several cases related to the inability of an individual firm to be admitted as a solo bidder. Thus the criteria inspiring the restriction of bidding consortia mirror the ones regulating individual participation. This is the case in Italy, Austria and Romania.[ii] In other cases, such as Belgium and Denmark, there exist almost no constraints to the formation of bidding consortia. In France, even those firms that can participate as solo bidders are allowed to form bidding consortia as long as the aim or the effect of the grouping is not a restriction of competition. This is equivalent to say that the procurement agency (PA) bears the burden to prove the harmful effect of the grouping when it aims at imposing some restrictions.

The variety of practices, sometimes contradictory, calls for an economic analysis of the consequences of bidding consortia on the degree of competition in procurement, and, ultimately, on the buyer's expected savings. We hold that some restrictions on the formation of bidding consortia have to be adopted. The absence of legal constraints would simply make "bidding rings" legal. Thus, although joint bidding must always to be restricted, **limitations should rely on sound economic principles**.

The analysis of (horizontal) bidding consortia in procurement bears some resemblance with horizontal mergers in oligopolistic markets. Mergers typically lead to a fewer number of competitors, higher market power of merging firms and thus higher prices for consumers. However, merging firms may exploit complementary assets, or cost "synergies", that enable the merged entity to achieve production costs below those of either firm before the merger. The overall effect on welfare, as first illustrated by Williamson (1968), is then the net sum between the loss in consumer surplus, due to higher prices, and the enhanced production efficiency due to cost synergies.

Although the same forces are at work in procurement markets, greater emphasis seems to be put on the market-power consequences of bidding consortia in the form of reduced participation.[iii] The latter is somewhat misleading since it is unclear whether it refers to the number of distinct submitted bids or, rather, the number of participants in procurement competitive process. Obviously, the two concepts do not

necessarily coincide if potential participants can form bidding consortia. It is then useful to label "*number of bids*" (NoB) the numerousness of distinct bids submitted by either solo bidders or bidding consortia to the procurement agency; and "*number of participants*" (NoP) the numerousness of participants *regardless* of whether they bid as solo bidders or as members of a bidding consortium.

The difference between NoB and NoP can be illustrated by the following example in which two scenarios are considered. In the first scenario, 4 suppliers compete independently for 2 homogeneous lots. In the second, 15 suppliers form 3 bidding consortia of equal size that compete for 2 homogenous lots. It is immediate that NoB is higher in the first scenario (4 bids vs. 3), whereas NoP is higher in the second (15 participants vs. 4). Assessing whether or not bidding consortia are anti-competitive requires an estimate of their impact on both NoB and NoP. However, we will hold that the objective of fostering competition in procurement is not always well served by pursuing neither of the two. We will emphasize that synergies arising from bidding consortia (mainly through cost savings) may enhance competition in procurement competitive processes even if joint bidding lowers the number of distinct bids. A centralized procurement agency, unlike almost all antitrust authorities, is typically in a position to estimate cost savings likely to originate from bidding consortia since it acts mainly as a regulator owing to the presence of specialized managers and to the repeated nature of the relationship with existing firms. Thus a PA should take synergies into proper account in order to evaluate the pro-competitive effects of bidding consortia in procurement auctions.

The remainder of this paper is organized as follows. In Section 2, we discuss some pro- and anti-competitive effects of bidding consortia. In Section 3, we analyze in more detail the nature of synergies arising when several firms join a bidding consortium. The main conclusion we draw is that if a centralized procurement agency is able to assess synergies among firms of different size it can design the procurement process and, in particular, restrict bidding consortia so as to maximize savings and/or efficiency. Finally, in Section 4, we discuss the main consequences of linking the constraints on bidding consortia to an individual firm's ability to participate in a competitive procurement as a solo bidder.

2. BASIC ECONOMICS OF BIDDING CONSORTIA

Bidding consortia allow firms to pool resources that are crucial in formulating a valid bid. They may share information about the likely value of the contract (e.g., forecasts about final demand, geophysical surveys on tracts in oil-lease auctions), jointly bear fixed costs, or even combine production facilities. Surprisingly, however, the economic literature on joint bidding has almost exclusively explored the aspect concerning information sharing. This point can be grasped by considering oil-lease auctions. When firms bid for the drilling right on a particular tract, the value of the object (i.e., the market value of the quantity of crude oil) is common to all participants, but unknown at the time the auction takes place. In such an environment each bidder is typically assumed to hold only one piece of information about the value of the object. Such a bidder's information is captured by a signal that is correlated with the unknown common value and, conditional on the latter, independent from all other bidders' signals (e.g., geophysical surveys on tracts). Thus, conditional on the true value of the object, it is likely that some bidders will receive a private signal above the true value while some others receive a signal below the true value. *Ex ante*, each bidder's signal is an unbiased estimate of the common value. If bidders submit offers that are an increasing function of the signal, then, *ex post*, the winning bidder learns that she has been overly optimistic. The event of winning informs her that she had received the highest among all signals. Thus in formulating her bid each bidder has to take this information into account. Failing to do so may cause the bidder to suffer from the "winner's curse," that is, to incur losses.

Imagine now that bidders are allowed to form bidding consortia. What would be the effect of bidding consortia on expected prices? Joint bidding generates mainly two opposite effects.

1. Bidders joining a bidding consortium rely on better information on the common value before submitting a joint offer. Using more than one signal, due to more than one geophysical survey, generates a more accurate estimate of the common value, thus reducing the risk of incurring in the winner's curse, which in turn implies a more aggressive bidding and *higher* prices.

2. Bidding consortia reduce NoB and thus lead to *lower* competition and prices.

Although clear-cut theoretical results are difficult to establish due to the interplay of opposite forces, some recent experimental evidence[iv] seems to point towards the same prediction in both first- and second-price auctions: Joint bidding leads to more aggressive bidding but lower prices. **The impact of a reduced number of bidders (lower NoB) outweighs the more aggressive bidding induced by the better information each bidding consortium relies on**.

The economic analysis of bidding consortia based on information sharing is admittedly restrictive. Since bidding consortia bear some similarities with mergers in oligopolistic markets, we find it worthwhile investigating such a link in order to fine-tune the predictions concerning the impact of joint bidding on expected prices in procurement auctions. Establishing a link between bidding consortia and mergers in oligopolistic markets leads us to consider the following dimensions:

Asymmetry.

Consider a procurement market in which suppliers are heterogeneous with respect to their capacities (so they differ in marginal costs). Suppliers submit price-quantity schedules to a buyer, as in a first-price multi-unit auction, and procurement is split. Firms are paid prices submitted for the quantities the buyer purchases. If we keep NoP fixed, bidding consortia obviously induce a lower NoB. Does this automatically imply higher purchasing prices for the buyer? The answer depends upon the composition of bidding consortia. For instance, when only a subset of firms merge, competition may become tougher if the asymmetry between the two firms with the highest market shares is reduced. Thus the buyer pays *lower* prices after the merger takes place.[v] The intuition is similar to the prediction in a standard two-firm, asymmetric Bertrand game. When the distance between firms' costs diminishes, the low-cost firm becomes more aggressive. The resulting lower market price benefits the buyer.

Coordinated Effects.

Coordinated effects arise because bidding consortia may either facilitate the operation of an existing cartel or favor the emergence of a new one. The decline in the number of competitors (lower NoP) may make it easier to adopt a strategy of "splitting the market." Each bidding consortium may (tacitly) agree to submit bids only on a limited number of objects/contracts, thus limiting competition and keeping prices high.

Risk Management.

A bidding consortium insures the buyer, at least partially, against procurement **risk**, that is, the risk arising when a unique supplier finds it impossible to procure a service due to an unexpected averse shock to productions costs. A bidding consortium allows its participants to pool individual linked to unforeseeable events, thus making it more likely that the procurement contract is successfully carried out.

While reduced asymmetries among participants and a reduced risk have pro-competitive effects, bidding consortia may increase the likelihood that participants reach (tacitly) collusive agreement, thus generating anti-competitive outcomes.

The final dimension we will dwell on is the emergence of synergies in bidding consortia. As briefly discussed in the Introduction, assessing synergies in horizontal mergers is a difficult task for any antitrust authority since the latter is unlikely to have access to those pieces of information (e.g., complementarities in the cost structures of merging entities) that may prove the existence of such synergies. A centralised procurement agency, instead, finds itself in the privileged position of being a regulator that is most likely to interact over time with a fairly stable set of competitors in procurement markets. Assessing synergies among those competitors is easier for the agency and is a crucial dimension for deciding the extent to which bidding consortia should be restricted.

SYNERGIES IN BIDDING CONSORTIA

Bidding consortia may enhance competition if firms can exploit **synergies.** In (horizontal) bidding consortia, synergies often are generated by reduction in fixed costs. Suppose, for instance, that suppliers are highly concentrated in two different geographical regions, north and south. If the procurement contract consists of one single national lot and requires firms to set up administrative offices in both regions, then solo bids force participants to duplicate their fixed office costs and might lead to higher purchasing prices for the buyer.[vi]

It is worth reiterating that bidding consortia induce a lower NoB under the assumption of a fixed NoP, that is, under the assumption that the number of suppliers potentially interested in the contract is *given*. It

would be misleading, however, to analyze the impact of bidding consortia on expected prices without investigating how the magnitude and the nature of synergies among firms determine *both* the set of competitors potentially interested in the procurement contract (NoP) *and* the number of independent bids (NoB). We will argue that restricting bidding consortia does have different impacts on NoP and NoB depending on the nature of synergies arising among firms.

In order to analyze these interacting forces we consider a scenario in which the set of potential participants is composed of small and big firms. We will make the assumption that *transaction costs* related to the formation of a bidding consortium are *increasing* in the number of its members and *decreasing* in their asymmetry.[vii] Since firms are heterogeneous in their sizes, synergies may have different magnitudes depending on the composition of bidding consortia. It will be then useful to explore each possible scenario in turn.

High/Low Synergies among big firms, low synergies among small firms

If a procurement agency opts for restrictive criteria for the formation of bidding consortia (among big firms), then NoP and NoB may increase as a consequence of a potentially higher number of solo bidders (especially big firms). Indeed we should not even expect the emergence of mixed bidding consortia since there are no synergies to be exploited while transaction costs are positive.

The overall impact on expected prices and efficiency depends upon two opposite forces. Higher NoP and NoB are likely to increase expected buyer's savings. This is just an effect induced by a higher number of competitors. However, big firms, forced to participate as solo bidders, are likely to be less aggressive than what they would have been had bidding consortia been allowed. Since they cannot exploit synergies they have to be more cautious in bidding, thus negatively affecting the buyer's expected savings. We can then derive the following conclusion.

> *When synergies among big firms are small, limiting bidding consortia in order to increase participation is likely to have a positive effect on the buyer's expected savings. When synergies are substantial and the number of big firms is high, restricting bidding consortia among big firms may negatively affect savings and efficiency.*

High/Low Synergies among big firms, high synergies among small firms

Restricting bidding consortia among big firms, but not the ones among small firms, may spur both NoP and NoB even to a greater extent than in the previous scenario. New small 'entrants' would now be willing to participate, and this for two main reasons. First, since big firms cannot regroup in bidding consortia, some new small 'entrants' (possibly the most efficient ones) may consider themselves in a position to compete with big firms that participate as solo bidders. Second, some small firms (new entrants or even existing ones) may participate by forming bidding consortia given the existence of positive synergies. Thus a higher number of small firms whether new efficient entrants or regrouped in bidding consortia may enhance competition, thus increasing the buyer's expected savings. We can then conclude the following:

> *When synergies among small firms are high, restricting bidding consortia among big firms may have a positive impact on the buyer's expected purchasing price through an enhanced participation of small firms given that big firms are forced to participate as solo bidders.*

> *When positive synergies arise among both small and big firms, permissive rules for bidding consortia between large firms may crowd out the participation of small firms.*

We are finally left to consider the situation in which positive synergies arise both in bidding consortia composed by big firms only and bidding consortia with big and small firms.[viii] Suppose that the magnitude of synergies is higher when firms are homogenous for a *fixed* number of members.[ix] Restricting bidding consortia among big firms is then likely to *(i)* increase the number of big firms participating as solo bidders; *(ii)* facilitate the formation of mixed bidding consortia, thus increasing the participation of small firms (both those already operating in market and new entrants). Thus

> *If transaction costs arising from the size of mixed bidding consortia are moderate then limiting bidding consortia among big firms may have a positive impact on the buyer's expected purchasing price via a higher participation of big firms as solo*

bidders and a more aggressive bidding of mixed consortia with an increased number of small firms.

The analysis undertaken so far highlights that limiting bidding consortia (mainly among big firms) does not always generate identical consequences in terms of number of active participants and number of independent bids. More importantly, it may have different impacts on the buyer's expected savings depending on the nature and magnitude of synergies among small and big firms. Nonetheless, our discussion allows us to draw two main conclusions that should guide the regulation of bidding consortia in procurement auctions.

Conclusion 1. The decision of restricting joint bidding should be taken on the basis of an evaluation of the optimal composition of bidding consortia, that is, an assessment of which types of firms are most likely to achieve the strongest synergies.

Conclusion 2. If a centralized procurement agency is able to assess whether or not synergies are likely to arise among potential participants, then it can fine-tune lot size and/or rules for bidding consortia in order to maximize savings and, possibly, efficiency.[x]

SOME CRITERIA FOR RESTRICTING BIDDING CONSORTIA

Having discussed the economic consequences of limiting bidding consortia, we now analyze which *criteria* might be used in the practice of procurement to determine such limits. In some European countries, for instance, it is customary to link the criteria for restricting bidding consortia with those regulating an individual firm's ability to participate in a procurement competitive process.[xi] Any firm potentially interested in a procurement contract is normally allowed to submit a bid on a specific lot whenever the firm's size is high enough with respect to the economic value of the lot, where the firm's size is typically measured by the turnover realized over a predetermined period of time. Thus a broad rationale for limiting bidding consortia could be phrased as follows:

(C.A) Whenever two or more firms realize a yearly turnover greater than or equal to the value of a subset of lots those same firms cannot form a bidding consortium.

The criterion as stated is too broad in that it leaves the size of the subset of lots unspecified. We will then explore different scenarios that differ in the number and nature of lots.

One lot

In this simple case, applying *(C.A)* produces an immediate limitation of bidding consortia. If, say, three firms achieve individually a yearly turnover at least equal to the value of the single lot they cannot form a bidding consortium. Notice, however, that *(C.A)* does not forbid any firm with a turnover above the value of the lot to form a bidding consortium with any number of firms whose turnover is *below* the value of the lot.

Several lots with different economic values

In this case, *(C.A)* must also specify which particular subset of lots to consider. We consider four possible criteria:

(C.Aa) The relevant subset of lots is the lot with the lowest value;

(C.Ab) The relevant subset of lots is the lot with the highest value;

(C.Ac) The relevant subset of lots is the lot with the highest value for which the bidding consortium submits an offer;

(C.Ad) The relevant subset of lots is the one for which the bidding consortium submits an offer.

(C.Aa) is clearly the *most* restrictive criterion from an *ex-ante* perspective, that is, the one that most limits bidding consortia for any given composition of lots and sizes (yearly turnover) of firms. It is not possible, however, to determine which criterion is the *least* restrictive since for two out of four criteria the extent to which a bidding consortium is restrictive depends upon the actual offers of its members that are not known *ex ante*. To see this last point consider the following

Example 1. There are 3 lots, A, B, and C whose values are 10, 20 and 40 million Euro. Consider two distinct scenarios. In the first one, a bidding consortium is willing to bid on lots A and B. In the second one, the same consortium is willing to bid on lots B and C. In the table below, we compute the critical value with respect to which to compare the firms' yearly turnover.

TABLE 1

Relevant Rule	Scenario 1: Bidding consortium bids on A and B	Scenario 2: Bidding consortium bids on B and C
(C.Aa)	10	10
(C.Ab)	**40**	40
(C.Ac)	20	40
(C.Ad)	30	**60**

It is immediate that criterion *(C.Ab)* is the least restrictive under scenario 1, whereas *(C.Ad)* is the least restrictive under scenario 2. Moreover a limited pairwise comparison leads to the following

Result 1. *(C.Ac) always dominates (C.Ab)*.

Argument. In order to prove the statement, we will argue that *(C.Ac)* achieves the same objectives as *(C.Ab)*, but at a lower cost. Suppose without loss of generality that five small/average-sized firms are interested in the lowest-valued (LV) lot for which they would also be able to bid as solo bidders. Moreover, assume that the same firms are not interested in the highest-valued (HV) lot for which they would *not* be able to bid as solo bidders (that is, individual participation criteria are not fulfilled). If *(C.Ab)* were used, those firms would be able to form a bidding consortium to bid only for the (LV) lot. Thus *(C.Ab)* would imply a cost in terms of reduced NoB since five firms would submit only one bid. If *(C.Ac)* were to be used, the same firms would still bid for the (LV) lot, but they would be forced to do so as solo bidders, thus increasing NoB on that lot. In this case, *(C.Ac)* increases NoB with respect to *(C.Ab)*. Suppose now that the same firms are interested in the (HV) lot and consider forming a bidding consortium to bid for that lot. *(C.Ab)* and *(C.Ac)* would generate the same outcome, that is, those five firms would be able to submit a joint bid. The two criteria induce the same NoB, and our argument is complete.

A fifth criterion may also be designed that would consist in fixing ex-ante the maximum number of firms that are allowed to form a bidding consortium whenever either *(C.Aa)*, or *(C.Ab)* or *(C.Ac)* or *(C.Ad)* is used. It could be phrased as follows:

(C.Ae). For any criterion among *(C.Aa)*, *(C.Ab)*, *(C.Ac)* and *(C.Ad)*, *N* firms, among those that satisfy individual participation criteria, can enter a bidding consortium.

By fixing *ex ante* the maximal size of a bidding consortium, even if each individual member can participate as a solo bidder, any of the criteria *(C.Aa)-(C.Ad)* may achieve different degrees of permissiveness towards joint bidding. This can be illustrated by the following examples.

Example 2. *(C.Ae) makes joint bidding easier.*

This can be achieved by choosing, for instance, *(C.Aa)* together with *(C.Ae)* and by fixing *N = 2*. Although two firms may participate as solo bidders, they are allowed to form a bidding consortium.

Example 3. *(C.Ae) makes joint bidding more difficult.*

Consider a procurement competitive tendering with two identical lots of 3 million Euro each. Criterion *(C.Ad)* is used together with *(C.Ae)* and with *N = 3* among those firms with a yearly turnover between 3 and 6 million Euro. For those firms with a yearly turnover of at least 6 million Euro, only *(C.Ae)* applies. In this case *(C.Ae)* limits the formation of bidding consortia since *(C.Ae)* alone would have allowed any number of firms with yearly turnover between 3 and 6 million Euro to join a bidding consortium.

Several Heterogeneous Lots

When lots differ with respect to their economic value *and* to other technical aspects, the criteria defining a firm's ability to be admitted to the tender may vary across lots, due to the presence of two distinct dimensions. Consequently, defining criteria for restricting bidding consortia based on an individual firm's ability to participate as a solo bidder on one specific lot (as for criteria *(C.Aa)-(C.Ac)*) cannot be optimal since lots are very likely to differ at least with respect to their technical requirements. We propose the following criterion

(C.H) Two or more firms can form a bidding consortium only for those lots for which they do not satisfy individual participation requirements.

The rationale behind *(C.H)* is to rule out all bidding consortia in which one or more members satisfy *both* the economic *and* the technical requirements to participate as solo bidders. Given that it is quite unlikely that a high number of firms are able to participate as solo bidders,

criterion *(C.H)* leaves the door open to the formation of potentially numerous bidding consortia especially if they are interested in bidding for a large number of lots. This (potentially anti-competitive) scenario might be counterbalanced by imposing a rule that links the maximum number of firms that can join a bidding consortium to the number of lots for which members of each consortium can participate as solo bidders. We can illustrate this principle by using

Example 4.

Suppose that a procurement contract consists of 3 (more generally *N*) heterogeneous lots. There are 10 potential participants. One firm satisfies all requirements to participate as solo bidder on the 3 lots; 3 firms can be solo bidders on 2 lots; 6 firms on 1 lot only. The adoption of *(C.H)* would allow an all-inclusive bidding consortium, thus leading to a potentially high purchasing price for the buyer.

The counterbalancing constraint that would restrict the formation of bidding consortia in this scenario might be stated as follows:

The maximum size of a bidding consortium should be: 1 firm if the latter can participate as a solo bidder on all lots for which it plans to submit a bid (generally N); 2 firms if they can participate as solo bidders on 2 lots (generally N-1); 3 firms if they can participate as solo bidders on one lot (generally N-2).

CONCLUDING REMARKS

We have stressed that the PA's objective to maximize savings and/or efficiency should lead to a more careful consideration of the pro-competitive consequences of bidding consortia. Restricting bidding consortia on the basis of a lower number of bids may be counterproductive, since firms' enhanced market power might be counterbalanced by a higher aggressiveness due to the presence of strong synergies. We have held that the PA's knowledge of the characteristics of potential participants is crucial in assessing the nature and the magnitude of synergies among types of firms that should guide the criteria to limit the formation of bidding consortia.

When the limitation of bidding consortia is linked to an individual firm's ability to participate as solo bidder, there exist several criteria limiting joint bidding. The analysis developed in last section of the paper

shows that general rules are difficult to state although it is possible to spot the most crucial economic forces that should guide any PA in a case-by-case approach.

APPENDIX
A COMPARATIVE ANALYSIS OF PARTICIPATION
REQUIREMENT(S) AND BIDDING CONSORTIA

Country	Requirement	Bidding Consortia
Greece – Ministry of Developm.	Criteria defined on article 20-23 of 93/36/EEC Directive.	Yes. Firms can be aggregated into a larger entity in order to submit common offer. Once firms are grouped together and submit common offer they are considered as a single participant. Firms can been aggregated into a larger entity before expiry of the time limit for receipt of offers, fixed by contracting authority. Each member of the group must meet the criteria of article 20 and 21 of 93/36/EEC Directive.
Austria-BBG	• Cumulative specific budget revenues (i.e. relative to the good/service object of the contract) of the last two years that does not need to be greater than the whole value of the frame-contract. This allows SMEs to enter the auction but permits each firm to win only a number of lots that can be covered by that cumulative specific budget revenue. • Bank warranties; • Ability to execute the contract (adequate network of outlets); • Quality certificates.	A firm that is able to participate alone can form an enterprise group w ith firms that can not participate alone. If two firms can participate alone they can not group. Once firms are grouped together they are considered as a single participant. Austrian cartel law also covers grouping of firms whereby grouping should be prevented between two or more firms able to bid individually. BBG did not impose any restrictions except in one particular case. Until now there has been made very limited use of this possibility by SME.
Consip	Cumulative specific budget revenues (i.e. relative to the good/service object of the contract) of the last two years that does not need to be greater than the whole value of the frame-	A firm that is able to participate alone can form an enterprise group with firms that can not participate alone. If two firms can participate alone they can not group. Once firms are grouped together they are

	contract. This allows SMEs to enter the auction but permits each firm to win only a number of lots that can be covered by that cumulative specific budget revenue. Bank warranties; Ability to execute the contract (adequate network of outlets); Quality certificates.	considered as a single participant. Italian and European laws do not establish particular restrictions to grouping. Restrictions we eventually impose are discretionary, and may vary from auctions to auctions. However, Consip followed the indication provided by the Italian Antitrust Authority during 2003, which noted that, in order to obtain sufficient levels of competition in the auctions, grouping should be prevented between two or more firms able to bid individually.
OGC	Financial standing and integrity of financial dealings Technical capability and capacity to execute the contract (adequate network of outlets); Quality certificates.	A firm that is able to participate alone can form an enterprise group with other firms that support their bid, typically in terms of capacity or expertise. Once firms are grouped together they are considered as a single participant. Genuine consortia bidding is allowed whereas collusive bidding in an attempt to distort the market is not and subject to challenge and legal proceedings.
Sweden	no restriction of participation of firms. All firms are welcome to participate. However, they must meet certain standards. No bankruptcy, no taxdebts, etc.	small firms that have special competence in certain areas may group together and submit a joint bid. In Sweden they do not regulate this in any special way.
France	For **public works** candidates must prove their technical qualifications, either with a system of certificates delivered by professional organisations or by providing written testimonies that they have successfully delivered similar works in a recent past. For **services** the requirement is basically past similar experiences. For **goods** we specify a minimum revenue only for very large contracts because courts have judged that nothing legally prevent a firm from multiplying 3 or 4 times its revenues with one	The French code rules that "companies may submit their application or tender in the form of joint grouping … subject to adherence to rules relating to free prices and competition" So even two(or more) firms able to participate alone can group as long as the aim or the effect of the grouping is not a restriction of competition, that is to say that it is the PA which has to prove the harmful effect of the grouping if it wants to bar it. The code allows groupings so the contracting authorities may not bar them. They

	public contract, unless the PA have solid technical reasons to think the firm will not be able to do it. For **national frame contracts** the most important requirement is the ability to deliver the goods all over the territory, that is about 7 000 different addresses. Candidates can prove the disposition of the necessary network with their own structure but also with the intervention of subcontractors. During the execution of a contract the MINEFI can't notify to a poorly performing contractor that it will be excluded from future tenders (this is not a penalty you can write in the specifications), but in a future tender when they check the qualifications of candidates we can use evidences of poor performances in a previous contract as evidences of insufficient qualifications (you need a convincing file). It is not clear in case-law how long a contracting authority can legally refuse to accept candidatures from previously failing contractors.	can sometimes mandate that tenders should be submit by groupings. For example for a contract dealing with the design and realisation of a building only groupings with (at least) one architect, one technical consultancy, one public works firm … can compete. There are two kinds of groupings: - The grouping is said to be joint when each of the members of the grouping undertakes to perform, within the context of a contract divided into lots, the lot or lots that he is likely to be entrusted with. - The grouping is said to be of a joint liability when each of the members of the grouping is liable for the performance of the entire contract, whether or not the operation is divided into lots.
Denmark	Bidding enterprises may not have outstanding debts to the public sector. They must certify that they do not use child labour, that they respect equality between sexes, races and religions and respect the UN's declaration of human rights and so on.	Enterprises can group together to participate. There are no regulations of this kind. There are not many instances of grouping of firms in relation to auctions initiated by SKI A/S. A rough estimate would be that less than 1 in 20 auction bids are from a group of firms. Usually only two or three firms to form a group.
Ireland	Qualification criteria or pre-qualification based on legal, financial and technical capacity (the latter would include relevant experience and references).	enterprises can group together to participate to the auction but one Supplier must take overall responsibility for the tender/bid. Each member of a consortium must meet the minimum legal, financial and technical capacity requirements

		as appropriate. Each member must be in a position to produce a Tax Clearance Certificate and must confirm their standing vis-à-vis the Ethics in Public Office Act
Romania	Bank warranties; Ability to execute the contract (adequate network of outlets); Quality certificates; Official papers of the company for the issuing of the digital certificate. most of these requirements are also to be shown to the contracting authority when the contract is sign and / or the goods/services are provided.	A firm that is not able to participate alone can set up, together with other companies, a group. Although minimum criteria are required for each company separately. Once firms are grouped together they are considered as a single participant. In this case a leader of the group would be defined. Romanian and European laws do not establish particular restrictions to grouping. Restrictions we eventually impose are discretionary, and may vary from auctions to auctions. However, SEAP followed the indication provided by the Romanian Competition Authority, which noted that, in order to obtain sufficient levels of competition in the auctions, grouping should be prevented between two or more firms able to bid individually.
Belgium	Barriers are placed as low as possible, with account taken of the competition aspect. To obtain an auction with a good result on the price level, ABA only want to allow the firms that have the competence that guarantees a perfect execution of the contract. To obtain that result, they selection seriously. The right level of barriers can only be obtained after a thorough market investigation. selection criteria always are justified in a written document meant for the functionaries who have to approve the tender. ABA contacts a lot of suppliers or firms and show them some fragments of the tender. They can give their opinion. ABA always ask them to	In the Belgian regulations the grouping of companies into a temporary trading company or a main contractor/subcontractor is provided for. It is up to the tendering authority to verify whether the bidders are abusing a monopoly or oligopoly or not. The best solution to this is a reliable market survey. The main contractor/subcontractor relationship and a temporary company are provided for in the Belgian regulations on government contracts. By doing so, small firms, when registered as one entity, can enjoy a range of advantages, i.e. the turnovers can be combined, the references of the various companies can be taken into account, etc. This means a consortium can be selected

justify their answers. For big tenders (for delivering goods of executing services of more than € 500.000,00) ABA do a publication in the Belgian and European journal in which ask for reaction of interested firms on their possibilities and competences. Only at the end of the discussion with those firms, ABA start the redaction of the technical specifications and the selection and awarding criteria. ABA always watches that the tender isn't written on the body of the firms contacted.

for the government contract and can make a better bid thanks to the bundling of efforts. As already stated, agreements between various bidders that lead to a disruption of competition are also forbidden in Belgium.

Example: contract for the IT-platform for the Belgian identity card. Eight Belgian companies went together in one concern. It was a negotiated procedure. ABA negotiated till the moment that obtained normal prices and normal conditions (terms, quality of the products and services,…). It is clear that releasing a big contract in one lot is very dangerous to stimulate the creation of monopoly situations, because the number of companies that are able to execute the contract in that case is very limited. In the future those kind of contracts will be cutted in many lots. The advantage is that the chances of the SME's will increase.

It sometimes happens that various selected candidates group together and submit a joint bid. This is permissible as long as all candidates are selected, unless the schedule of conditions states otherwise. It has already occurred (especially with complex government orders for services) that ultimately only one bidder remains, because all selected candidates have grouped themselves into a consortium. It is self evident that the time of the price formation must be closely viewed and that the discounts which can then be achieved will be rather minimal. If the contracting authority notices that the price develops unfavourably due to the lack of competition, it can always opt not to follow up the current procedure and decide to launch a new government order, while taking account of the elements

		that have led to inadequate competition.
Cyprus	Usually it required by participants to provide bank warranties and certificates that they have no outstanding obligations with VAT, Social Security and Tax. Then depending on the nature of the item auctioned, additional requirements may include some sort of financial information, previous experiences demonstrating ability to execute the contract, quality certificates etc.	Once firms are grouped together they are considered as a single participant. No regulations exist for the grouping of firms
Czech Republic	The Czech Act for public contracts (40/2004) makes it possible to restrict a number of tenderers using other criteria then technical, economical and legal qualification. This possibility is applicable for restricted procedures only. The institution will recognize the advantages and disadvantages of this possibility in the future.	According to the Act it is possible to make consortia of firms - applicants for contract. There are conditions for certification of qualification in these cases in this Act. However, the institution haven't registered such a tendency yet. there aren't any national regulations for grouping of firms.
Hungary	the Hungarian law not just provide the possibility to use "restriction" on the base of financial-economical standing and/or technical-professional capacity, but it is an obligation for the contracting authorities. Generally the followings are used in Hungary: yearly balance, yearly revenue (from the activity which is concerned in the given award procedure), similar contracts from the previous years/experiences, bank statement from the bidder's financial condition, quality control measurements and – especially in works contracts – the demonstration of the professionals and the machines which will be involved during the execution of the contract.	Several bidder may establish a group in order to add their capacity together, and to fulfil the requirements they should to participate in the procedure. On the one hand, in accordance with the EU directives, the bidders may group together freely to take part in a procedure. This "phase" isn't specially regulated in the national law (only the bid should contain the relevant information on the group, or in Hungary rather called: consortium). On the other hand, if the group wins the contract they may be required to establish a company. This is regulated in the national company law. The contracting authorities usually don't request specific information

		regarding the group, giving the relevant information is the interest of the bidders. The contracting authority should know whether the bidders have joined together in a consortium or their relation is contractor-subcontractor. (The name, the co-ordination among the tenderers, the leader of the group, any other information which is necessary for the contracting authority in order to "realize" that this is a consortium are usually given by the groups.)
Poland	The awarding authority may request from contractors only documents necessary to conduct a procedure, specified in the notice, specification of essential terms of the contract or invitation to submit tenders. Where the value of the contract exceeds 60 000 Euro, the awarding authority shall request from the contractors documents proving that they satisfy the conditions for participation in the procedure. For the contracts below 60 000 Euro the awarding authority may request those documents. The categories of documents are specified in the Regulation of Prime Minister of 7 April 2004 and are related to the candidate's: - economical and financial standing; - technical capacities; - experience and knowledge. The awarding authority shall also require the candidates to pay a deposit where the value of the contract exceeds 60 000 Euro. If the value of the contract is below 60 000 Euro, it may do so. As the execution of the contract is concerned the awarding authority shall require a security. Security shall serve to cover claims in	According to the Public Procurement Law contractors may compete for a contract jointly. The contractors shall appoint a plenipotentiary to represent them in the contract award procedure or in the procedure and conclusion of a public procurement contract. Participants forming a group shall be jointly responsible for the execution of the public contract and provision of security on due performance of the contract. There are no particular regulations for grouping of firms in Polish legal system. The consortia are established on the basis of civil law contracts between the entities

	respect of non-performance or improper performance of a contract. If a contractor is at the same time a guarantor, this security shall also serve to cover claims in respect of quality guarantee. The awarding entity shall require the contractor to provide security, if : - the contract value exceeds 60 000 Euro for works; - the contract value exceeds 5 000000 Euro for supplies and services; - a procurement contract is to be concluded for a period longer than 3 years.	
Malta	Participation by firms is not usually restricted other than by bank guarantees (bid bond) in auctions exceeding a certain amount.	Firms are allowed to group together and participate in an auction as a single participant. Usually there are no restrictions to the grouping of firms unless this gives rise to a cartel, which would be against competition law.
Germany - BESCHA	• Cumulative specific budget revenues (i.e. relative to the good/service object of the contract. The revenue depends on the amount of the purchase); • Bank warranties; • Ability to execute the contract (adequate network of outlets if necessary); • References (if useful) • Authority attestations about the payment of taxes and social insurance contributions • Quality certificates.	Yes. There are no special conditions for the establishing of bidding communities (group of firms). The bidding community has to fulfil all requirements in the same way a single firm has to. In procedures without a reverse auction the bidding community must be established until the end of the time limit for receipt of tenders. In procedures with reverse auctions the group must be founded before the auctioning procedure.
Slovakia*	According to Article 29 and 30 of the Act, tenderers or candidate interested in participating in contract award, must fulfil some requirements – mandatory (§29) and not mandatory, as financial and economic standing and technical capacity in executing supply contracts, in awarding	

	contracts for works and to provide a service (§30).	

NOTES

[i]   Our focus in this paper is on "horizontal" bidding consortia, among similar firms that are normally competing with each other, so we disregard "vertical" consortia between firms specialized on different components of – say -- a bundled procurement contract.

[ii] In the Appendix, we provide a detailed comparative analysis of both the criteria for individual participation and for the formation of bidding consortia in some European countries.

[iii] The Italian Antitrust Authority, for instance, recommends that "[…] a properly designed procurement procedure should guarantee the highest level of participation of undertakings interested in the selection process. Pursuing such an objective requires … the correct adoption, from a competitive perspective, of such institutions as bidding consortia.

[iv] See, for instance, Mares and Shor (2003).

[v]   This point is developed in Chiesa (2004).

[vi] Suppose that 25 firms are located in the north and other 25 in the south. If cost-reducing synergies are strong enough, 25 two-firm consortia would be likely to bid more aggressively than 50 solo bidders, thus reducing the buyer's expected purchasing price.

[vii] The presence of a big player may facilitate the solution of co-ordination problems in the formation of consortia.

[viii] In most procurement auctions, bidding consortia regroup indeed firms of different sizes.

[ix] That is, a consortium (Big, Small) generates *lower* synergies than a (Big, Big) one.

[x]   When synergies arise among lots (e.g., fixed production costs for geographical lots), rather than being firm-specific, higher levels of

efficiency and savings may be achieved by allowing for package bidding (see Dimitri, Pacini, Pagnozzi and (2006).

[xi]   Austria, Italy and Romania adopt explicitly such a link. In other countries the admissibility of bidding consortia is decided on a case-by-case basis by Antitrust Authorities following a procedure that resembles the one adopted in merger cases. France adopts an extremely permissive stance in that firms can form bidding consortia even if each one of them possesses all the prerequisites to participate as a solo bidder. The burden of the proof of possible harmful consequences of bidding consortia relies on the PA.

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