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does it distort competition?**

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When rivals team up in procurement: does it distort competition?

By Jan Bouckaert (University of Antwerp and Oxera) and Geert Van Moer (Hanken School of Economics and Helsinki Graduate School of Economics)

The purpose of this article is to offer insights to courts and competition authorities on how to assess horizontal agreements to team up in a procured project. We argue that agreements which are specified *in advance* of bidding should be evaluated against the counterfactual whereby firms negotiate subcontracts *after* bidding has ended. Following this approach, we challenge the commonly held viewpoint that joint bidding distorts competition if the bidding consortium members could each bid solo. We also question the need for bidding consortium members to integrate their operations.

I. Introduction

The question on how to promote competition in public and private procurement is of great importance. Bosio et al. (2020), for example, report that expenditures in public procurement amount to no less than 12% of world GDP. Whereas direct contracting permits discretion to deal with unforeseen events, the bulk of all spending in procurement happens through competitive auctions.¹ By letting bidders compete, well-designed auctions are capable of selecting the most efficient sellers. Furthermore, auctions also serve the aim of the procurer to limit expenditures.

In this article we focus on the competitive effects of agreements between rival firms to team up in a procured project. Such *horizontal agreements* are common in a variety of major industries, such as oil drilling, military equipment, loan syndication, or (highway) construction works. Broadly speaking, we can distinguish two types of horizontal agreements.

¹ Gerardino et al. (2017), in their dataset from a procurement agency in Chile, observe that “Auctions make up about 51% of purchase orders and 66% of dollars spent.” The recent CEPR book by Bandiera et al. (2021) presents a variety of perspectives regarding rules versus discretion in the context of procurement.

Firstly, by using subcontracts, firms can agree to efficiently spread the workload of a project, while still separately handing in competing bids in the procurement. For example, after the winning bidder has been selected, he may hire a losing bidder as a subcontractor to complete a part of the project. The precise conditions of the subcontract may be specified after the winning bid has been selected (*ex post*) or already in advance of bidding (*ex ante*).

Secondly, as a more pronounced way of cooperating, firms can also submit a joint bid in the procurement. After winning they can then distribute the tasks of the project between the bidding consortium members. They can also jointly decide about potentially outsourcing some tasks from losing bidders who are outsiders to the bidding consortium.

Clearly, it can be sensible to permit firms to bid jointly if they would not have the production capacity or know-how to bid solo. In this event, the bidding consortium members are not each others' rivals. Joint bidding then does not cause a reduction in the number of bids, and hence we can presume that it does not distort competition.

Courts and competition authorities also apply this reasoning in reverse: bidding consortia between members capable of bidding solo have typically been deemed anti-competitive. Joint bidding, then, causes a reduction in the number of bids, and is therefore assessed as a distortion of competition. Already in 1975, the US Congress prohibited joint bidding arrangements between large oil companies for offshore oil leases, while permitting the practice for small companies (Hendricks and Porter (1992)). In a similar vein, European national competition authorities and courts have recently upheld the reasoning that joint bidding is illegal when the firms could realistically bid solo.² In Norway, for example, a consortium for patient transportation contracts was regarded by the Norwegian Supreme Court as a restriction of competition by object since parties were capable of bidding individually.³ A similar criterion was used in Denmark in the Road Marking case in 2019 (Nissen and Haugsted (2019)). The “no-solo-bidding requirement” that firms cannot bid solo for evaluating bidding consortia is gaining ground, as further evidenced by the recent guidelines on joint bidding by the Danish Competition and Consumer Authority (2020).

In this article we question the economic rationale for the no-solo-bidding requirement. Even when firms could individually complete the project, there are still economic incentives for them to agree on a more efficient redistribution of tasks, either by using subcontracts or by forming

² Ritter (2017) discusses joint tendering under EU competition law.

³ Judgement of the Norwegian Supreme Court, HR-2017-1229-A, 22 June 2017.

a bidding consortium. This means that there is scope for horizontal cooperation to reduce costs, even when cooperation is not strictly necessary to perform the project.

Furthermore, prohibiting joint bidding based on the no-solo-bidding criterion does not mean that firms will abstain from collaborating altogether. Instead, whenever there is an incentive to exploit economies of scale or scope, firms will want to turn to subcontracting agreements. The practice of joint bidding should thus be evaluated against the *correct counterfactual* whereby firms make (more extensive) use of subcontracts. Rational bidders obviously take into account the nature of the subcontracting market when selecting their bids in the procurement.

The purpose of this article is to offer takeaways to competition authorities and courts on how to assess subcontracting and joint bidding agreements between (potential) competitors. We begin by describing the most common forms of horizontal cooperation in section II. After that, we will discuss the competitive effects of subcontracting in section III. Here we argue that subcontracting agreements which are signed ahead of bidding should be evaluated against the counterfactual whereby the agreements are signed afterwards. The subsequent section IV is devoted to discussing the competitive effects of joint bidding when firms can also sign subcontracts with each other. Based on our recent research, we will outline how a temporary bidding consortium makes the subcontracting market more competitive, and thereby makes bidding in the procurement more aggressive too.

II. Common ways for rivals to team up

In this section we categorize the most common ways for rivals to team up in a procured project. We structure the different types of agreements based on their degree of coordination during the bidding stage. In particular, we begin by describing agreements which involve a low degree of coordination upfront, before turning to more integrated ways for rivals to join forces.

Ex post horizontal subcontracts

We start by describing ex post horizontal subcontracting. Here the timing of the agreement is *ex post*, i.e., after the bidding in the procurement has ended. For example, after the winner has been appointed, he can decide to perform the entire project in-house, or to search for a supplier who is willing to perform part of the work more cheaply. It comes as no surprise that the firms

who have earlier placed a competing bid are also particularly suitable candidates for acting as subcontractors, as it is precisely these firms which have access to production equipment and qualified personnel.

An example of an industry where ex post horizontal subcontracting is common is the syndicated loans market (Sufi et al. (2007) and Hatfield et al. (2020)). Firms initially compete to become the responsible underwriter for an Initial Public Offering. Then, after the winner has been selected, he can invite the losing bidders to work together in a syndicate. There is an efficiency motive for firms to team up as doing so enables them to access a larger pool of investors.

As another example, Branzoli and Decarolis (2015) focus on Italian public procurement and write that “[...] each bidder is required to specify in its bid whether it will use subcontractors or not, but not the identity of subcontractors. In practice, all bids always indicate the use of subcontractors.” Merely mentioning the use of subcontractors does not seem to establish a real commitment for any of the parties. Therefore, the subcontracting agreements are essentially being negotiated ex post.

Ex post horizontal subcontracts, as well as ex ante horizontal subcontracts which we will describe next, are in Europe assessed as production agreements under Article 101(1) TFEU and may be exempted based on efficiencies according to Article 101(3) TFEU.

Ex ante horizontal subcontracts

Under ex ante horizontal subcontracting, firms already make agreements with their subcontractors before submitting bids. Conditional on winning, the subcontracts are carried out as specified.

Sometimes the rules of the procurement mandate to specify the subcontractor for each task ex ante. Marion (2015), for example, studies procurements for Californian highway construction projects. In his dataset, each bid lists the “subcontractors to be used, as well as a short description of the work to be performed”. An important reason behind this requirement, from the perspective of the procurer, is to make sure that the bidders and their subcontractors have the necessary qualifications to perform the project.

Companies may also sign ex ante horizontal subcontracts even if the rules of the procurement do not require them to do so. An example are the subcontracting agreements between the bidders for clinical physiology services in Stockholm in 2008. These agreements, between

Aleris and *Capio* and between *Aleris* and *Hjärtkärlgruppen*, specified that if one of the parties wins and the other party loses, the losing bidder has the right to become subcontractor for the winner (Hoskins (2017)).

Temporary bidding consortia

A more intense type of cooperation is to form a bidding consortium, whereby firms jointly hand in one bid in the procurement. We begin by describing temporary bidding consortia between firms which are set up *ad hoc* for specific projects, before turning to structural consortia in the next subsection.

It has been documented that joint bidding is common in auctions for US offshore oil and gas leases. Furthermore, a good deal of joint bidding agreements in this industry is temporary in nature. Haile et al. (2010, p.391), for example, report that “firms who bid jointly in one area of a sale will not necessarily do so in other areas or other sales.” The major player *Exxon* bids jointly in 13% of its bids. This means that *ad hoc* cooperation in temporary consortia is a popular cooperative construct. As another example, Gugler et al. (2021) study the Austrian construction sector and report that the majority of bidding consortia is temporary, although some firms show joint bidding behaviour up to thirty times.

How does a temporary bidding consortium act on the subcontracting market? This depends on the outcome of the bidding process. When the temporary consortium is selected as the winner, the consortium members jointly decide about whether to produce in-house and/or to contract from losing bidders who are outsiders to the consortium. In contrast, when a temporary consortium does not win in the procurement, the horizontal cooperation between its members breaks down and the consortium dissolves. The consortium members then compete as separate entities to act as subcontractor for the winner, as if there had not been a consortium.

Our description of a temporary consortium parallels that of a “non-full-function joint venture”. In Europe, this type of agreement between firms resorts under Article 101 TFEU and the Guidelines on Horizontal Cooperation Agreements (Communication from the Commission (2011)). Likewise, in the US, the Antitrust Guidelines for Collaborations Among Competitors (Federal Trade Commission (2000)) describe whether joint bidding is in violation with the antitrust laws.

Structural bidding consortia

Finally, we describe structural bidding consortia, which are set up for a long-lasting relationship. For example, in the US market for outer continental shelf leases, the consortia *Kerr/Marathon/Felmont* and *LaLand/Hess/Cabot* bid jointly at least 90% of the time (Hendricks and Porter (1992, p. 507)) and hence can be suitably categorized as structural consortia. In Norway, *Ski Taxi* and *Follo Taxi* set up a long-lasting cooperation by submitting joint bids through their joint venture for many years (Sanchez-Graells (2018)).

A structural bidding consortium differs from a temporary one as it operates jointly, not only when winning the procurement, but also when losing the procurement. The bidding consortium members can coordinate their operations through a joint venture or via an implicit relational contract.

In Europe, a structural bidding consortium is likely to be classified as a “full-function joint venture”, falling under the European Merger Regulation (Council Regulation (2004)). Similarly, in the US, a consortium would be treated as a merger if “the collaboration does not terminate within a sufficiently limited period by its own specific and express terms.” (Federal Trade Commission (2000, §1.3)).

III. When to worry about subcontracting?

In this section we discuss the competitive effects of subcontracting agreements between rival firms. Why and when do horizontal subcontracts reduce expenses for the procurer? Can an *ex ante* subcontract be preferred over an *ex post* horizontal subcontract? And what are the type of provisions in an *ex ante* subcontract that competition authorities should pay attention to? ⁴

Besides formulating insights on these questions, our discussion here also serves as a steppingstone for understanding the competitive effects of joint bidding, a goal which we will pursue in the subsequent section.

Ex post horizontal subcontracts

⁴ For a formal analysis, we refer to Kamien et al. (1989) who study equilibrium bidding in a model where the incentive for subcontracting follows from production cost functions being convex. Spiegel (1993) studies models of horizontal subcontracting when firms compete in quantities. Gale et al. (2000) study sequential procurement. Haile (2001, 2003) and Bouckaert and Van Moer (2021) analyze frameworks where the incentive to subcontract follows from cost uncertainty at the time of selecting bids.

We begin by discussing the bidding incentives of firms when there are opportunities to sign subcontracts *ex post*, i.e. after the winning bid has been announced. Firms anticipate these subcontracting opportunities when selecting their bids. Figure 1 illustrates the perspective of a bidder in the procurement. He needs to decide whether to submit an aggressive bid and profit from winning the procurement (walk left) or to submit a less competitive bid and profit from subcontracting (walk right). The bidder, however, cannot select both strategies at the same time: winning the procurement means to forego the opportunity to profit from subcontracting.

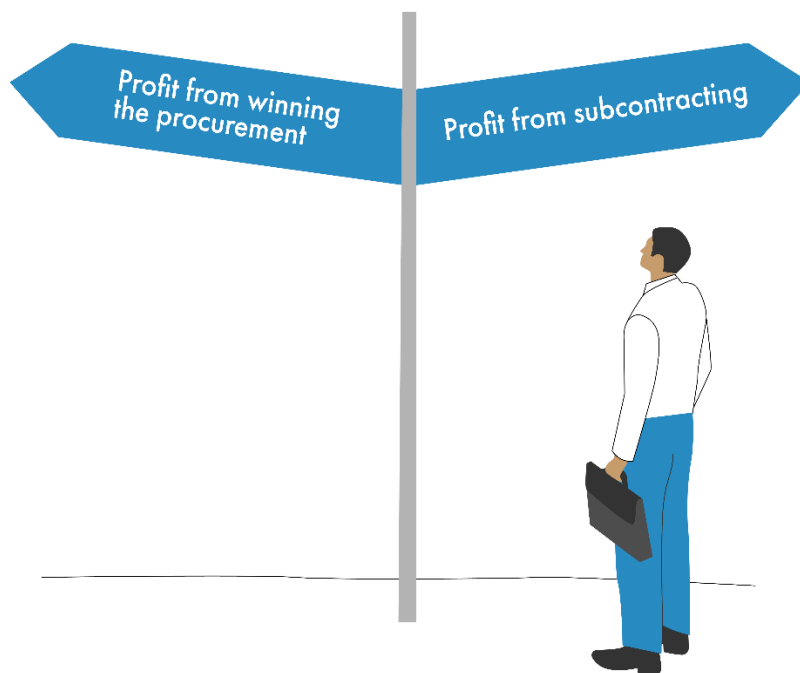


Figure 1: The perspective of a bidder in the procurement.

Suppose first that the bidder submits a sufficiently competitive bid such that he *wins* the procurement. At what cost could he then perform the contract? Clearly, the option to complete the entire project in-house acts an upper bound. However, it may be possible to lower costs by contracting from one or several of the rivals. This opportunity gives scope for horizontal subcontracting to be pro-competitive.

The magnitude of the pro-competitive effect depends on the size of the cost-reduction achieved. The competitiveness of the subcontracting market is critical. Can the winner choose from several candidate subcontractors who are substitutable and compete against each other to

become subcontractor? If so, the winner can expect to substantially save costs by subcontracting. This effect tends to make initial bids more competitive, lowering expenses for the procurer. However, if instead there are only a few specialized subcontractors with unique skills and there is a tight time constraint for the contractor to complete the project, the winner may find himself in a weak position to bargain a good deal in the subcontracting market. He may then end up paying his subcontractors almost as much as he would incur when completing the tasks in-house. This risk of being held up in the subcontracting market erodes the pro-competitive effect of horizontal subcontracting.

An alternative for the bidder is to aim for making a profit as a subcontractor, by *losing* the procurement. What determines the profitability of such a strategy? The competitiveness of the subcontracting market is once again crucial. When there are several substitutable subcontractors, competition between them will likely erode their profits. Bidders then have little to lose from bidding aggressively in the procurement. In contrast, when losing bidders expect to be able to subcontract for the winner at favourable terms, initial bidding will be less aggressive. Firms do not have incentives to submit a bid which results in a lower profit than the alternative profit from acting as a subcontractor. The equilibrium bid rises up to the level whereby the winner is compensated for foregoing the opportunity to profit as a subcontracting.

Taking stock, the above discussion shows that a competitive subcontracting market benefits the procurer *twofold*: effective competition between subcontractors not only reduces the winner's direct cost, but also lowers the *opportunity cost* of winning (i.e. the sacrificed profit from acting as a subcontractor). Similarly, an uncompetitive subcontracting market harms the procurer by raising the winner's direct cost as well as by raising its opportunity cost. We summarize these insights as follows.

Takeaway 1: The practice of horizontal subcontracting impacts bidding incentives via two countervailing forces. On the one hand, the ability to hire subcontractors lowers costs and makes more aggressive bidding possible, a pro-competitive force. On the other hand, the opportunity to profit from subcontracting lessens the incentive to bid aggressively, as winning the procurement means foregoing this opportunity. This effect constitutes an anti-competitive force. A high degree of competition between subcontractors strengthens the pro-competitive force and weakens the anti-competitive force.

Ex ante horizontal subcontracts

How about *ex ante* horizontal subcontracting? An *ex ante* agreement should be compared against the counterfactual whereby the agreement is negotiated *ex post*. We can expect that *ex post* subcontracting is equally capable of achieving a cost-efficient allocation of the project tasks. Rather, the difference between the two types of agreements lies in how the gains from subcontracting are distributed between the winner and the subcontractor(s). Under *ex post* subcontracting, the distribution of these gains is determined by the relative bargaining strengths of the parties, when no commitments were made upfront. When an *ex ante* subcontract coincides with the subcontract which would otherwise have been signed *ex post*, bidding incentives are identical. *Ex ante* subcontracts, however, provide an opportunity for firms to pre-specify the distribution of the gains from subcontracting in a different way as well. First, it is possible that the *ex ante* agreement allocates extra bargaining power to the subcontractor(s). Such an agreement raises the bids in the procurement, by making winning more expensive and making subcontracting more attractive. Second, in contrast, an *ex ante* subcontract which focuses on protecting the winner against hold-up makes bidding more competitive and lowers expenses for the procurer.

Takeaway 2: Horizontal subcontracts which are specified *ex ante* should be compared against the counterfactual whereby firms would negotiate horizontal subcontracts *ex post*. An *ex ante* agreement which imposes duties on the winner makes bidding less aggressive and raises expenses for the procurer. In contrast, *ex ante* agreements which impose duties on the subcontractors are pro-competitive.

These observations raise the question how firms want to design their *ex ante* horizontal subcontract. Do firms prefer to impose duties on the winner, or do they instead want to design their agreements to impose duties on the subcontractors? Our analysis suggests that imposing duties on the winner makes subcontracting more profitable and hence makes bidding in the procurement less aggressive. Consequently, industry associations may have incentives to design regulations and institutions which deteriorate the winner's bargaining position and benefit the subcontractors.

An indicative example can be found in the California Subcontracting and Subletting Fair Practice Act, which requires bidders to declare their subcontractors at the time of bidding (see Miller (2014)). We can expect that such a regulation, by restricting choice for the winner *ex post*, makes winning more expensive and subcontracting more attractive, in comparison to *ex post* subcontracting. A possible justification is to make sure the bidder can credibly complete

the project. Moretti et al. (2015), for example, report that supplier qualification screening typically aims “to verify that the supplier is indeed able to comply with all of the contract specifications with a reasonable degree of certainty.” Our discussion, however, warns for an alternative, anti-competitive motive. Specifically, industry associations may wish to uphold qualification provisions, even in situations where credibility is not an issue, just so as to make bidding in the procurement less aggressive.

These incentives are reversed when the winner suffers from hold-up to such an extent that completing the contract at the reserve price of the procurer would be loss-making. Firms then have incentives to mitigate the hold-up issue by signing an ex ante agreement which imposes duties on the subcontractor. These types of agreements are beneficial for the procurer.

IV. Joint bidding versus subcontracting

In this section we analyze the practice of joint bidding whereby firms jointly hand in a bid in the procurement. We are interested in the interaction between joint bidding and the subcontracting market. Our discussion is based on Bouckaert and Van Moer (2021) where we present a formal analysis.⁵

The key idea we explore is that joint bidding acts as a substitute for horizontal subcontracting. Intuitively, the decision for a bidding consortium to redistribute the workload among its members is an internal one. To implement the same allocation of tasks without the bidding consortium, firms would need to turn to subcontracting agreements. This mechanism gives rise to a negative relationship between joint bidding and subcontracting. Branzoli and Decarolis (2015), for example, have empirically documented a change in auction format in Italy which simultaneously *increased* the prevalence of joint bidding and *decreased* subcontracting activity.

How should we evaluate joint bidding agreements when firms are able to sign ex post subcontracts as an alternative way to distribute the project tasks?

⁵ The earlier economics literature on joint bidding has focused on other dimensions, such as the effect on entry (Moody and Kruvant (1988)), pooling of information (Krishna and Morgan (1997)), and auction design (Waehrer (1999)).

A first insight is that, even if the members of the bidding consortium would not be able to complete the entire project solo, they are nevertheless potential competitors in the procurement as long as they can sign subcontracts with each other. For example, a small bidder might be able to bid solo, despite being capacity-constrained, because it has opportunity to hire losing rivals using subcontracts. Firms are thus less likely to pass the “no-solo bidding requirement” in the presence of a subcontracting market.

In fact, if a winning firm can hire *each* of its rivals as a subcontractor, then *all* firms could credibly bid solo. These observations suggest that the current legal practice, whereby firms are only permitted to bid jointly when they could not bid solo (“the no-solo-bidding requirement”), is difficult to apply in practice. Whether the opportunity to hire subcontractors is sufficiently realistic, is a question of judgment which requires a detailed understanding of the industry.

We next argue that the no-solo-bidding requirement is not only difficult to apply in practice, but also difficult to defend on economic grounds. We start by describing the effects of a temporary bidding consortium, after which we focus on the effects of a structural bidding consortium.

Temporary bidding consortia

We begin by considering the bidding incentives of the outsiders to the bidding consortium, as they are the ones who effectively discipline the bidding consortium in the procurement. How are the outsiders affected by the formation of the bidding consortium? As displayed in Figure 1, each outside bidder is confronted with the choice whether to profit from winning the procurement or whether to aim for making a profit as a subcontractor.

We will argue that the formation of a temporary consortium deteriorates the opportunity for outsiders to profit from subcontracting. To see this, we need to compare their perspective when the winner is just a small firm versus when the winner is the bidding consortium.

If the winner is a small firm, there is much demand for subcontracting services. Outsiders might then be able to earn a high profit margin as subcontractors, in particular when the subcontracting market is uncompetitive. The subcontracting market can be uncompetitive, for example, when there are search costs and the winner is time-pressured to deliver the project.

In contrast, if the bidding consortium wins the procurement, it is quite likely to be well-equipped to handle the entire project in-house. This effect disciplines the seller power of the outsiders in the subcontracting market. They consequently earn lower profits when being called

upon as subcontractors, or simply end up being called upon less frequently. The formation of the bidding consortium thus means that a winning outsider foregoes fewer profits from subcontracting. As a result, outsiders are willing to bid more aggressively in the procurement.

How about the bidding incentives of the temporary consortium itself? The reduction in subcontracting profits for the outsiders constitutes a direct cost saving from the perspective of the bidding consortium. Following the illustration in Figure 1, to the degree that the temporary bidding consortium makes “walking right” *less* attractive for outsiders, so it also makes “walking left” *more* attractive for the bidding consortium. The bidding consortium thus selects a lower bid as well.⁶

The effects we describe are particularly pronounced when the subcontracting market is uncompetitive. Forming a bidding consortium is then an effective instrument to circumvent high fees in the subcontracting market. In contrast, the effects we describe are less pronounced when subcontractors already compete fiercely in price against each other.

Taking stock, the presence of a subcontracting opportunity makes it possible for firms to achieve a cost-efficient allocation of the workload, even when bidding separately. Joint bidding is therefore not “indispensable” for firms to minimize their production costs. Nevertheless, a bidding consortium establishes *buyer power* in the subcontracting market. The increase in buyer power makes everybody bid more aggressively in the procurement.

Takeaway 3: When the subcontracting market is uncompetitive, forming a bidding consortium can establish buyer power in the subcontracting market with respect to outsiders to the consortium. Outsiders to the bidding consortium then find the role of subcontractor less attractive and are therefore willing to bid more aggressively in the procurement. Furthermore, the bidding consortium sees a reduction in its costs and hence is able to select a lower bid as well.

Structural bidding consortia

Should we be more lenient towards structural bidding consortia? Members of a structural bidding consortium continue to cooperate as a single entity also when losing the procurement. The fact that they jointly sell as subcontractors has two additional implications, which do not arise for consortia which are temporary in nature.

⁶ The direct cost reduction also acts as a motivation for firms to initially form the temporary bidding consortium, even if doing so results in fiercer competition.

Firstly, if an outsider to the consortium wins the procurement, he would face a less competitive subcontracting market due to the joint selling behaviour by the structural consortium members. This effect makes it more costly for outsiders to win the procurement and hence raises their bids.

Secondly, the prospect of jointly selling in the subcontracting market makes subcontracting more attractive for the structural bidding consortium. This effect makes the structural consortium less willing to bid aggressively in the procurement, too.

In summary, structural bidding consortia differ from temporary ones as they jointly sell in the subcontracting market. As a result, all firms submit higher bids in the procurement. In the absence of offsetting efficiencies, which may arise when the consortium members integrate their operations, the procurer's expenses are lower under a temporary than under a structural consortium.

Takeaway 4: The ability of a structural bidding consortium to jointly sell in the subcontracting market raises the bids in the procurement, relative to when the consortium is temporary. The current legal approach to treat structural consortia as mergers is therefore well-justified.

The above discussion sheds new light on the need for bidding consortium members to integrate their operations. In the Danish Road Marking case, the “Supreme Court found that the cooperation was in fact a means to distribute the parties’ individual services through a joint bid and joint price-setting. [...] The consortium, therefore, had as its object to restrict competition.” (Danish Competition and Consumer Authority (2020)). Without digging into the specifics of the case, we do wish to comment on the type of reasoning used here. Whereas a mere distribution of the workload may indeed fail to generate specific cost efficiencies, a temporary consortium nevertheless boosts the bidding incentives via the increased buyer power in the subcontracting market. A structural consortium would impact the subcontracting market in a less favourable way than a temporary consortium. Synergies would be needed to make up the difference, and even more synergies would be needed for the procurer to prefer a structural consortium over a temporary one. We therefore find support for the view that the burden of proving synergies should rest with the structural consortium members.

V. Concluding comments

In this article we have focused on the competitive effects of ex ante horizontal subcontracting and joint bidding agreements. As a counterfactual we have presumed that firms can alternatively sign subcontracts after bidding has ended. According to this perspective the indispensability requirement is less likely to be satisfied. Nevertheless, an agreement which lowers the cost of hiring subcontractors, strengthens competition in the procurement via this effect.

Our discussion sheds light on the current legal practice that joint bidding arrangements are not permitted between potential competitors unless there are operational synergies. Specifically, we highlight that joint bidding arrangements tend to generate buyer power in the subcontracting market, an effect which intensifies competition in the procurement. Of course, caution remains warranted when a bidding consortium is formed between all potential bidders, or when there is a risk of coordinated effects. Structural bidding consortia differ from temporary ones as they establish seller power in the subcontracting market. They can thus only be justified based on offsetting operational synergies.

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