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Fighting skewed bids in the EU,

A comparative analysis

Abstract

The common framework provided by the GPA is used to effectively compare the possibility to reject skewed bids in European and in federal US public procurement. The analysis reveals that the European public agencies are much more vulnerable to this type of gaming than Federal agencies in the US. Some ECJ case law exists on the related problem of abnormally low tenders that seems to offer scope for a partial solution. Much more could be achieved through integral price analysis that includes unit-prices and high prices. By combining the integral price analysis with the procedural requirements of the abnormally low tender provisions, the EU could implement most of the protection that is already standard in the US, while providing the procedural guarantees that are required by the internal market. For future evaluation of the effectiveness and efficiency of the public procurement procedure, as well as to implement effective quality and reputation standards for bidders, the EU should consider creating a database with procurement outcomes.

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1. Introduction

Currently I cannot get my preferred brand of highlighters at my department at the Erasmus University Rotterdam (EUR). This manufacturer brand is stocked out with our supplier. I suspect the stock out is not accidental, but cannot prove this. There is some circumstantial evidence, however. Our supplier also carries his own-label brand of highlighters, costing €1.60 a piece, a staggering 10 times more than the manufacturer brand. At those prices I would also prefer to supply my own-label brand. For me the real question is not why our supplier stocked out, but why does the contract specify such bizarre prices and how can we get a better contract next year?

The answers to both questions lie in the way we selected our suppliers. The EUR, like all publicly funded organizations in the EU and USA, commonly uses procurement procedures that work like a reverse auction. These reverse auction work like normal auctions in the sense that there is one bid-taker that faces several bidders who make him an offer and he uses a simple decision rule to determine which offer he is going to accept. In a typical procedure the EUR, as bid-taker, asks all interested parties to send him a price (a bid) for some good, take highlighters for example. At a specified date all bids are opened and the bidder that demands the lowest price per highlighter gets the contract and will supply all the highlighters the EUR needs for that year. This seems like a very simple and effective way of buying supplies. The reverse auction ensures competition for the market determines the prices, the EUR can pick the lowest price available at the market at that time and does not have to haggle for each and every highlighter. At the end of the year the supplier multiplies the amount of highlighters actually ordered with the unit price to determine the final bill, such that the EUR pays him a fair amount.

The EUR needs more than just highlighters; it needs pens, pencils, board markers, printer toner, food, coffee, desks, computers etc. Furthermore, the EUR does not want to have an auction for each type of pen, nor does it want to check before ordering some pens and pencils which pen needs to be ordered where. The common solution is to bundle alike goods and procure contracts per bundle. With each supplier the EUR signs a unit-price contract that allows the EUR to order items when needed and pay per ordered product.

Acquiring several goods per contract changes the reverse auction though. First the EUR sends out price requests for several goods at once. Our office supplies contract for instance deals with (a.o.) pens, highlighters and markers, while the office furniture procurement procedure determined the prices of desks and chairs. This implies that vectors of prices instead of single prices have to be compared during the selection process. To compare the prices of pens with the prices of highlighters in a consistent and fair way the EUR specifies a basket of goods (a so called score rule) and uses the offered unit prices to calculate the cost of this basket with each bidder. The bidder who offers the lowest price for the basket is selected as supplier. By making the quantities in the basket equal to the quantities the university expects to need in the coming year, the EUR picks the supplier with the lowest expected bill, i.e. the most efficient supplier. If this procedure goes well it ensures that the university gets value for money, while the fairness of the procedure is guaranteed by announcing the score rule ex ante. That way each bidder can calculate his final bid and the score rule cannot be created to favor a specific supplier ex post.

Unfortunately, the quantity estimates of the EUR are just that: estimates. The final quantities ordered will most likely be different amounts. The EUR could for instance announce a score rule that lists (a.o.) 1000 pens and 1000 highlighters. If a bidder thinks that more pens than highlighters will be bought, say 2 pens for each highlighter, he can start manipulating his bid. If both items are normally

sold for 10 cents, his final bid would be 200 Euros. This same final bid can be achieved by asking 15 cents per pen and 5 cents per highlighter. If the EUR is right he will make no losses, but if he is right asking 15 cents per pen increases his revenue substantially. In fact, any bidder that thinks the EUR's estimate is wrong, can increase his expected revenue by asking more for one item and less for another.[1] The predictability of the mathematical formula that is used as score rule ensures all bidders know exactly how to manipulate their prices without changing their final bids, so without changing the way their bids are judged by bid-taker. This strategic manipulation of unit-prices in a bid is known as unbalancing or skewing a bid and creates several problems for the EUR (and any other bid-taker).[2]

The first problem we have already seen. A bidder might, ex post, choose not to fulfill parts of the contract because they will cost him money. By decreasing some prices the bidder actively misaligns his future interests with the interests of the bid-taker. In normal (market-) transaction there is an amount of common interest in the transaction, both parties gain from the trade. A strongly skewed bid can break this alignment because a bidder might actually lose money from honoring his obligations even though he receives the agreed upon payment. In our example it would make sense for the bidder to claim he is out of highlighters since their price is (too) low. In general, the lack in alignment of interests during execution means that more time is spent in administration and oversight. The potential stock outs and conflicts are types of non-performance that can severely delay projects and can be a cause for (legal) arguments between two contracting parties.

The second problem is price risk. In these contracts the final bill is unknown when the contract is signed since it depends on the quantities that are actually ordered throughout the year. As long as prices do not change too much from year to year, most of the risk is in the unknown quantities. However, as bidders start to skew, some bidders might increase prices on highlighters while others increase the price of pens or printer toner, which adds risk in the unit-prices. This extra risk means that budgets are harder to set ex ante and overruns will be more common. In the end, it simply makes these budgets harder to manage.

A third problem is that it can cost money. Procurement is the process of buying goods and services. Any procedure of public procurement should therefore aim to get value for tax money. Bid skewing can seriously hinder the governmental agencies in achieving this basic goal. As the example shows, skewing can increase the revenue of bidders without changing per unit costs or quantity procured. This makes it a relatively easy way to increase profits. On average the bidders should profit, as long as they have better estimates than the bid-taker. This is a requirement that is commonly met since, by specifying a score rule equal to their expected quantities, the government reveals the relevant information it possesses, while the bidders have no such obligation. [3]

A fourth problem is that the manipulation of bid prices reduces the amount of information the government has when selecting a contracting party. By manipulating the unit prices the bidder breaks the link between the final bid and expected costs. This means that the selection decision of the bid-taker is no longer based on a relevant criterion, but on a more or less arbitrary one. Arbitrariness decreases the legitimacy of the procedure. Furthermore, competition on an irrelevant criterion is not a healthy type of competition. Unlike normal market competition it decreases welfare

[1] See Appendix A.1 for a numerical example.

[2] Unbalancing or skewing a bid, are equivalent terms if one looks at the behavior of the tenderer. However, "unbalanced" is a term with legal implications in the US, so throughout the paper I will use this term in its legal meaning and use variants on the word skewed or skewing to describe the structure of manipulated bids and the behavior of tenderers.

[3] For a more complete economic analysis of the procedure I refer to Renes 2011.

by drawing resources away from activities that add to social welfare. This side effect of the procedure runs counter to the aims of the government and thus reduces the legitimacy of the procedure even more.

If the problem of skewed bidding was restricted to highlighters at a university it would be quite manageable. However, economic theory predicts that all auctions with several line items (products that are individually priced), will attract skewed bids. That is, any procurement procedure or auction that uses a mathematical formula and several bidder supplied unit prices to assign a contract is vulnerable to this type of strategic pricing. Consequently it can hardly be a surprise that the problem is common in such diverse fields as, construction management, road construction and maintenance,[4] and in the selling of timber harvesting rights in the US.[5]

Given these problems and the size of the public procurement market[6] it seems that the bid-takers should take measures to protect themselves from this type of bidder behavior. In this paper I compare the possibilities to not select, or reject skewed bids within three legal frameworks and use what I find to draw some policy conclusion for public procurement in the EU. The overarching WTO-agreement on public procurement, GPA,[7] contains no provisions directly relating to the problem of skewed bidding. The big procurement directives[8] in Europe also do not specify any rules directly relating to skewed bidding. However, the FAR,[9] that regulates public procurement on the federal level in the US, does contain special provisions on how to detect and when necessary reject unbalanced bids and the EU might be able to learn from this approach.[10]

By comparing the procedures for rejection, selection and award in the directives with those in the FAR, I show that the differences in approach to skewed bidding and procurement between the EU and the US are more than just superficial. I find that US federal agencies have much more leeway in rejecting skewed bids than governmental agencies within the EU. These findings are in line with earlier studies comparing the procurement of the individual states in both jurisdictions.[11] The most likely explanation for these differences is the background of the relevant codes and regulations. The European procurement directives are cast as tools for the completion of the internal market, while the US FAR is aimed at regulating public procurement such that it gets value for tax money.

These findings suggest that EU governments will face more problems related to bid skewing than their US counterparts under the FAR, since they do not have the same possibilities to deal with skewed bids. The simplest solution to bid skewing problems for the EU would seem to be copying the tried and tested rules on unbalanced bids from the US. However, those rules lead to direct rejection of bids based on a mathematical formula. This means it violates the legal protection and procedural guarantees afforded to bidders by the Court of Justice of the European Union (ECJ) based on the abnormally low tender provisions. A partial solution could be to apply the abnormally low tender provisions to unit prices, which would allow some skewed bids to be rejected. This would, however,

[4] Bajari, Houghton and Tadelis. 2007.
[5] Athey and Levin 2001.
[6] The total value of goods and services procured by the governments of the EU-27 was estimated to be 2.288,44 billion Euro in 2009, roughly 20% of their combined GDP (European Commission 2010).
[7] The Plurilateral Agreement on Government Procurement (1994) as signed in Marrakesh on April 15 1994 during the Urugay round of the WTO, see infra section 3.1.
[8] Directive 2004/17 EC and 2004/18 EC, see infra Section 6.2.
[9] Federal Acquisition Regulation and Federal Acquisition Regulation System, see infra section 3.3.
[10] § 14.404-(2)(g) jo. 15.404-1(g) FAR, see infra Section 6.3.
[11] Hoffman 2011, Verdeaux 2003.

never provide for the same barriers to skewed bidding as the specialized rules of the US. If the EU seriously wants to decrease skewed bidding, it should specify procedures for integral price analysis. Given the similarities in means and ends of the abnormally low bids provisions in the EU and the unbalanced bids provisions in the FAR, I would advise the EU to expand the abnormally low bids provisions to include high prices and unit prices. This would implement the substantive part of the unbalanced bids provisions, since it would allow similar integral price analysis as the FAR, while it preserves the procedural guarantees required by the internal market of the EU.

2. Methodology and structure

There are two approaches one can take to stop bid skewing, one can either remove the profitability of winning with a skewed bid, or decrease the chance of winning with a skewed bid. The first approach involves the effect of institutional rules on incentives and is studied elsewhere as a mainly economic problem.[12] This paper follows the second approach by focusing on the possibilities to deal with skewed bids in the selection process in the European directives. It studies the possibilities to not-select or outright reject skewed bids in the EU and contrasts them with the possibilities under the FAR to find its strengths and weaknesses.

It would be easy to overlook essential differences in the macro environments when comparing such specific details as the selection process. Differences in the macro environments can, however, have important effects on the interpretation of rules and exceptions. To avoid this pitfall, I will identify a common structure in the federal US and EU public procurement trough the legally binding WTO procurement agreement, the GPA. Since both the FAR and the big EU procurement directives are bound by the GPA, they should not violate the constraints set by it. The GPA can therefore provide a common structure that can be used to identify the reverse auction procedures in both jurisdictions that are susceptible to skewed bidding. Due to the common structure these procedures are comparable, but the comparison also highlights some important differences. After these differences in the procedures are identified, the details of the selection process can be described and compared.

The GPA and the FAR are relatively complete in their coverage of types of contracts and procedures and are directly binding upon the governmental bid-takers. The EU, however, has several distinct directives containing rules of public procurement that cover different sets of contracts and the directives are by their nature not directed at the bid-takers or the market participants. These differences do not present any insurmountable problems.

Although some special directives[13] have an important role, most public procurement within the EU, both from the member states and from EU agencies,[14] falls under the scope of the 'special sectors directive' and the 'public sector directive'.[15] These two "big procurement directives" follow the same system and many of the articles are verbatim copies. To save unnecessary references I will therefore refer only to the public sector directive, a table of equivalence between the two directives is included in appendix A.2.

The fact that directives, unlike the FAR, are aimed at member states rather than bid-takers does not diminish the conclusions I draw. The special nature of the European legal order has created a situation where the bidders are still able to rely upon the directives in national courts and the directives bind the bid-takers through this channel.[16]

To save on distracting notation I will only mention the code a section or article stems from in the footnotes unless it is necessary to prevent confusion. In general the paragraphs in the FAR will be denoted by § while the articles in GPA and in the Directives will be denoted as art. Throughout this

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[12] See Renes 2011.

[13] E.g. Directive 2009/81 EU For defense and security procurement.

[14] See Title V and specifically art 105 of Council Regulation No 1605/2002.

[15] Directive 2004/17/EC (special sectors directive) and Directive 2004/18/EC (public sector directive).

[16] See infra Section 3.2.

paper I will be focusing on the federal level procurement in the US and not the state level that is covered by a different set of rules. So any reference to the US is to be read as a reference to the Federal entities covered by the FAR.

The rest of the paper will be structured as follows: I will start on a macro level by describing the regulatory frameworks to create a sense of institutions and their origin. Within these frameworks I will classify different types of procedures and then zoom in on the reverse auction procedures that are most susceptible to bid skewing. Within these procedures selection, award and rejection is compared. The core of the analysis studies how, on the micro level of in individual procurement processes, agencies can use price analysis to select non-skewed bids and/or use the results of this price analysis as a rejection ground for skewed bids. During these steps I will use the structure found in the GPA to identify the common elements, before describing and contrasting the European system and the FAR. Finally I will look at the consequences of the differences found from a law and economics perspective and formulate some policy implications and advice for the EU before concluding.

3. The regulatory frameworks

Studying all rules related to public procurement in all of its many forms is well beyond the scope of this paper, but it is impossible to study specific details like selection, award and rejection (i.e. the selection process) without a sense of their macro environment. The macro environments are determined by the overarching regulatory frameworks of the directives, GPA, and the FAR. There are differences in the nature and underlying goals of these regulatory frameworks that have implications for the way the selection process is perceived and will have to be covered before I can properly compare the EU's procurement processes with the ones prevailing in the US in following section.

3.1 GPA

The GPA is a legally binding agreement that was signed in 1994 during the Uruguay round of the WTO in Marrakesh. It covers almost all contracts concluded by public authorities that are valued above certain threshold values and thus covers most of the FAR and the big EU procurement directives.[17]

The first recital to the GPA lists "the need for an effective multilateral framework of rights and obligations….achieving greater liberalization and expansion of world trade and improving the international framework for the conduct of world trade" as goals. In setting these goals, the GPA seems to overlook the central goal of public procurement: getting value for tax money. The Agreement seems to regulate the way governments buy the necessary inputs for their production, without looking at the fundamental goal of public procurement.

In this respect the third recital is also remarkable where it states: "it is desirable to provide transparency of laws, regulations, procedures and practices regarding government procurement". Although transparency can be desirable in many instances, it is an unlikely final goal. Instead the third recital should be understood to relate to the first, meaning that it is one of the means to improve the framework for the conduct of world trade. As such, it seems that the wording of the GPA does not clearly discriminate between final goals and intermediate, or instrumental goals.

3.2 EU directives

The big two procurement directives were implemented in 2004 to harmonize the different systems of public procurement in Europe. Their enactment is based on the internal market provisions and as directives they are not addressed at the bid-takers.[18]

Many authors argue that the public procurement directives are meant to complete the internal market.[19] This fits very well with recitals 2 and 10 of the public sector directive that focus on the internal market objectives of openness and non-discrimination. This opinion fits with the directives enactment procedure and is also acknowledged by the ECJ as the primary goal of the directives.[20]

Just mentioning this goal is, however, only painting halve of the picture of European procurement policy. In its 1996 green paper the Commission noted that procurement policy should be aimed at "achieving competitive conditions and non- discrimination in a single European market, while

[17] Art. I GPA.
[18] Art. 288 TFEU.
[19] E.g. Bovis 1998 and Arrowsmit 2006.
[20] ECJ 12 July 2001, C-399/98, ECR I-5409 (Ordine degli Architetti and Others), paragraph 52.

achieving value for tax payers money."[21] The final part of this statement acknowledges that procurement is about getting value for money and the ulterior goals mentioned in the first part of the sentence do not change that. The ulterior goals should be achieved while achieving value for money. An issue that is not resolved in this statement by the Commission is how these objectives can be properly combined, but a straightforward solution exists. By harmonizing the procurement procedures through the directives and ensuring non-discriminatory procedures, the national procurement markets are opened to foreign competitors and competitive conditions are created. The procedures themselves should then be aimed at getting value for money. The procedures themselves should be designed to buy good products at good prices.

3.3 US FAR

The Federal Acquisition Regulation and Federal Acquisition Regulation System (FAR) are codifications of uniform procedures and policies for agencies of the US federal government.[22] Its stated goals are delivering on a timely basis the best value product or service to the customer, while maintaining the public's trust and fulfilling public policy objectives.[23] In this specification it is much more direct than the EU directives in acknowledging the purchasing goals that underlie any procurement process. The specification does leave room for alternative goals, but none are mentioned explicitly.

The perspective one takes toward the aim of public procurement rules has profound influence on the interpretation and breadth of the specific rejection grounds found in the procedures. If procurement is aimed at getting value-for-money, as in the FAR, the primacy in the procedure should be with the governmental agency that is supposed to attain this goal. The rules should prevent decisions that are arbitrary and capricious, but furthermore not hinder the overall acquisition process. Therefore this aim calls for a strictly marginal judicial review by the courts. The European goal of completion of the internal market puts the primacy in the procedure with the market participants, since they have to be protected against governmental favoritism and discrimination. Any rejection ground for individual bids therefore has to be relatively narrow and strictly specified to prevent abuse, while allowing the courts, on request of the bidders, quite a wide range of judicial review. As such the interpretation of the rejection grounds found in the regulatory frameworks can be quite different, even though they seem semantically similar.

It is tempting to regard the FAR as the complete system of public procurement in the US, but it is not. While it regulates the common aspects of federal procurement, each individual agency can still have, and often has, specialized additions to these rules. This makes the FAR similar in function to the EU directives. Both codes provide a basic framework for procurement processes, but they leave specific details to be filled in for the individual procurement procedures, facilitating the comparison.

The FAR, unlike the European directives, is directly addressed at individual bid-takers. This formal difference with the directives does not diminish the similarity in function or hinder the comparison. The special nature of the EU legal order makes the directives binding upon the bid-takers via a different route. The supremacy of EU rules and the vertical direct effect the ECJ affords them, require that all procurement procedures go according to the rules as set out in the directives. If a procedure violates the rules capable of having direct effect in the directive, all member states' national courts are held to interpret the national rules in a way that does not conflict with the European rules, or

[21] European Commission 1996, p3.
[22] § 1.101 jo. 2.101(b)(2) FAR.
[23]§ 1.102(a) FAR.

refuse to apply the national rules altogether if there is no way to reconcile the two.[24] Furthermore, all member states have implemented the directives in one way or another and if the implementation or the way a governmental agency treats a bidder violates the rules in the directive, bidders can rely on the directives in their national courts via their vertical direct effect.[25] The supremacy of the EU rules thus guarantees that any conclusion the ECJ draws with regards to these directives applies equally in all countries of the EU. By referring to these directives and the surrounding case law, I can clearly show the limits of governmental discretion in procurement. These limits determine the room for maneuver of individual bid-takers and are thus the relevant set of rules for my comparison.

[24] Case 6/64 Flamino Costa v. ENEL (1964) ECR 585

[25] Case 18/89 Foster v British Gas Case (1990) ECR 1990 I-03313.

4. Procedures

The regulatory frameworks describe several types of procedures, but not all of them are equally relevant for skewed bidding. A procedure that allows large amounts of discretion in the final stages of selection can avoid skewed bids by using this discretion to reject bids if necessary. It is mostly in reverse auctions, where the award decision of the bid-taker is guided by a mathematical and consequently predictable decision rule, that skewed bidding becomes a problem. Before studying the selection process I will therefore compare the procedures that are listed in the regulatory frameworks to identify the reverse auctions that share the most crucial feature for skewed bidding, a mathematical formula that picks the winner from a set of viable bids. The rest of the paper will then focus on the selection process within these procedures.

4.1 GPA

For acquisitions above certain threshold values the GPA allows the use of 4 types of procedures:[26]

a) Open tendering procedures
b) Selective tendering procedures
c) Limited tendering procedures
d) Negotiations

The open procedure and the selective procedure are the preferred procurement procedures in the GPA.[27] They both have auction elements that make them transparent and non-discriminating. They require the agency to post a price request either publically (open procedure) or to some selection of possible suppliers (selective procedure). The award criterion used to select the winner has to be made public in the price request, which makes award highly predictable and thus susceptible to bid skewing. In these procedures the situation can arise that an agency does not want to grant the contract to the tenderer who, on the terms of the procedure, won the procedure. These reverse auction procedures are the relevant ones for bid skewing.

Limited tendering procedures and negotiations should not present bid-takers with many problems from skewed bidding. The limited tendering procedure is mostly an emergency procedure, its use is only allowed if all else fails or is really inconvenient.[28] Since in this procedure only one "bid" is considered, if there might be reason to reject this bid, this procedure should simply not have been used. For negotiated contracts this objection holds even stronger. If the bid is unacceptable after the negotiations, the negotiations are apparently not yet over or one can conclude that the contract is not feasible. Under these circumstances skewed bidding should not be a problem. A skewed bid is just another reason to either keep on negotiating or end the procedure. The rules for rejecting individual bids are not relevant since that is the same as repealing the entire procedure, such that it should only happen if the contract is deemed unfeasible.

4.2 EU Directives

Chapter V of the public sector directive specifies four types of procedures that are similar in name and in execution as the ones found in the GPA: [29]

[26] Art. VII (3) and XIV GPA.
[27] Art. XV(1) GPA specifies Limited tendering as an exception.
[28] Art. XV GPA.
[29] Art. 28 ff. Directive 2004/18 EC.

1) Open procedures;
2) Restricted procedures;
3) Competitive dialogues;
4) Negotiated procedures.

The directive specifies that the open and restricted procedures are most important.[30] Both procedures follow the same pattern as the reverse auctions in the GPA. They start with informing potential and eligible tenderers.[31] Next the tenderers send in bids, and those bids are compared during selection and award.[32] Like in the GPA only lowest price and economically most advantageous tender can be used as award criteria and the criterion used has to be made public during the price request.[33] These are the reverse auction procedures in the EU that I will focus on.

The use of the competitive dialogue is restricted to contracts that are particularly complex and where the contracting authority considers "that the use of the open or restricted procedure will not allow the award of the contract" and thus reverse auctions are not able to procure the required goods and services.[34] The dialogue continues until the solution(s) can be identified that meet the agencies needs, after which it becomes an auction procedure by specifying the award criterion of economically most advantageous tender.[35] Since bids can only be prepared after the procedure transforms to an auction, it will suffice to cover the auctions. All conclusions drawn there will apply, mutatis mutandis, also to the end of the competitive dialogue procedure.

Negotiated procedures come in two forms, with or without formal notice in the official journal of the EU.[36] In general agencies will have to officially announce their intention to procure even when negotiating, but if the original procurement failed the agency can use a "silent" procedure, that is a procedure without notice. [37] The negotiated procedure with notice can be applied in similar situations as the negotiated procedure without notice: the use of auction instruments has to be excluded. As in the GPA, negotiated procedures are emergency procedures, they only follow if other options are not or no longer realistic. The discretion agencies have during negotiations means that they are not relevant for analysis of skewed bidding.

4.3 FAR

The most important procurement procedures in the FAR are grouped in part 6. That part is declared applicable to all procedures, barring some exceptions.[38]

The procedures of part 6 are split into three main categories of acquisition processes:[39]

1) Full and open competition (subpart 6.1),
2) Full and open competition after exclusion of sources, (subpart 6.2)
3) Other than full and open competition (subpart 6.3),

[30] Art. 28 Directive 2004/18 EC.
[31] Art 35 Directive 2004/18 EC.
[32] Art 44 Directive 2004/18 EC.
[33] Art 53 Directive 2004/18 EC.
[34] art 29(1) Directive 2004/18 EC.
[35] Art 29(5) Directive 2004/18 EC.
[36] Art. 30 and 31 Directive 2004/18 EC respectively.
[37] e.g. Art. 31(1)(a) no tenders were offered.
[38] § 6.001 FAR, the parts 12, 13, 14, 15, 17 and 18 of the FAR cover most of the exceptional procedures.
[39] § 6.000 FAR.

Out of these 3 processes, full and open competition is the most important one. Deviating from this standard is only allowed in the circumstances described in sub-parts 6.2 and 6.3.[40]

Full and open competition after exclusion of sources adds a prior stage to the standard process in which eligible sources are selected. After this stage it returns to the standard procedures of full and open competition and has the same final selection process.[41] Since rejection and award are the same as in full and open competition, this process does not require separate coverage.

Full and open competition entails 4 types of selection procedures:[42]

a) *Sealed bids*;
b) *Competitive proposals*;
c) *Combination of competitive procedures* (*e.g.,* two-step sealed bidding);
d) Other competitive procedures

Out of these, the sealed bids procedures are considered the default procedures and are thus most common, while competitive proposals are the most acceptable alternative.[43] Like the Open and Selective tendering of the GPA and the Open en Restricted procedures in the EU directives the sealed bids and competitive proposal procedures can be qualified as reverse auctions.

The other competitive procedure category is too divers to constitute a general procedure and covering all of its options is well beyond the scope of this paper. The other than full and open competition of sub-part 6.3 can deviate from the procedures of full and open competition, but only if it is not possible to use one of the first two procedures listed under full and open competition.[44] This implies that they are either reverse auctions similar to the ones I will study below, or different procedures that do not involve a pre-determined mathematical award criterion and are thus not relevant for skewed bidding. In both cases it is not necessary to cover them separately.

The rejection of a winning skewed bid happens only in the final stage of a procurement procedure. The rejection of individual bids at the end of the combined procedures therefore falls at a par with the rejection of bids in the procedure used in this stage. For my purposes it therefore suffices to focus on the sealed bids and competitive procedures that are covered in § 6.401 and subparts 14 and 15. These procedures are the ones I will compare in the rest of the paper.

[40] § 6.101(a) FAR.
[41] § 6.201 FAR.
[42] § 6.102 FAR.
[43] §§ 6.102 and 6.401 FAR.
[44] §§ 6.300 and 6.301(e) FAR.

5. Selection, Rejection and award

Since the bid-taker is only looking for the best offer and usually more than 1 bid is received, most of the tenders will be rejected. This rejection can happen in two distinct stages of the process, either during selection of the viable offers or by application of the award criterion. This mechanical award criterion of an auction is the part of the procedure that a skewed bid tries to exploit, but to get to that stage the bid must first be selected as a viable offer. Preparing a bid costs time and money, so no bidder will prepare a bid just to get rejected. By setting constraints on the type of bids he will consider viable during application of the award criterion, the bid-taker can thus shape the bids he will receive. Before looking at the usual award process, this section studies the selection of viable bidders and to see the constraints this places on the bidders and their bids. The section starts again by defining the common framework of the GPA and then contrasts the EU's implementation with that of the US within this framework.

After selection and/or award, bidders might want to protest against either the selection or award decisions. Differences in bidder protection will be quite important for the bid-takers in their selection of viable bids, as they might be asked to defend the choices they made in court. The way judicial review is done might also influence the way the selection process, or more precisely rejection-grounds are treated. A marginal review will allow bid-takers more freedom in shaping bids through selection criteria than a full review would. To be complete I will therefore briefly discuss the bidder protection in the EU and compare it to bidder protection in the US to show that the differences in judicial review I predicted in section 3.3 are born out in actual bid protests.

5.1 GPA

None of the articles in the GPA explicitly state that individual tenders can be rejected, however, award cannot be to all bidders. Instead the GPA defines the qualities the winning bidder should have and assumes automatic rejection for the rest of the bidders. The required qualities show the kind of rejection grounds the bid-takers can specify and will be used as a convenient categorization of both the constraints placed on bid-skewing in the normal procedure and the solution strategies.

The GPA requires that a winning bidder should meet the requirements in the tender documents, be able to complete the contract, have a tender that meets the requirements in the request for tenders, and have the cheapest or most advantageous bid according to the evaluation criterion the agency postulated at the start of the procedure.[45] As such being the winner of the procedure is just one of the criteria a bidder should meet to get the contract awarded to him.

A final important rejection ground is inserted as a special case of inability to complete the contract. Bid-takers are required to enquire with a tenderer that sends in an abnormally low bid about its ability to complete the contract against these terms. Award can only be to a bidder that is able to complete the contract, such that this would lead to rejection unless sufficient evidence is offered by the bidder about his ability to deliver against these prices.

[45] Art. XII (4) GPA.

5.2 Selection, rejection and the award in the EU and US

The rejection grounds in the Directives and the FAR are most easily compared grouping them according to the rejection grounds found in the GPA. The GPA lists four selection criteria that can be applied before the award criterion, leading to 5 ways an individual bid can be rejected:

I) The tenderer does not meet some specified objective criterion required to be able to submit a bid.
II) The tenderer is thought to be unable to complete the contract as agreed.
III) The tender does not meet the pre-specified essential requirements.
IV) The tender is abnormally low.
V) The tender is not the cheapest or economically most advantageous (i.e. not the winner).

Since the US and the EU mostly implemented very similar conditions I will cover them simultaneously where applicable and in the order listed above to find possible differences in these procedures in the FAR and the directives. The final part of the section discusses how these differences translate into the ability of bid takers in the US and the EU to deal with skewed bids and thus into differences in the received bids.

Ad I) Personal standing of the tenderer

It is recognized on both sides of the Atlantic that government should not do business with companies of questionable repute. Therefore there are minimum standards on past behavior, personal standing and ability of the contracting parties that are eligible to submit a tender.[46]

The EU allows agencies to reject bids from bidders that have some form of grave misconduct in their history that calls into question their intention to honestly complete the contract. If a bidder participated in a criminal organization, was involved in money laundering or fraud, or failed to pay taxes, his bid can be rejected. The money spent is tax money, the ratio of these rules is to allow little opportunity to get swindled, provide funding, indirect rewards or even money laundering opportunities for people that have acted against the interests of the community.

Under the FAR a bigger group of bidders is rejected on the basis of personal standing. Winning bidders cannot be suspended, debarred, proposed for debarment or declared ineligible by the government. These measures are applied following more types of misbehavior than the EU's personal standing criteria.[47]

The FAR also includes a policy to only contract with parties that have proven to be responsible.[48] It allows agencies to use misbehavior in previous government contracts as a selection criterion.[49] Trough the information in the "Federal Awardee Performance and Integrity Information System" (FAPIIS) this policy allows the federal government of the US collectively to punish companies for bad behavior in previous contracts by taking past behavior in to account when awarding contracts.

Within the EU it is hard to punish bidders for misbehavior in previous procedures. To include past performance an objectified performance standard would have to be created, but the rating of bidders would have to rely on bidder supplied information, since there is no central depository for

[46] EU: Art. 45 to 50 Directive 18/2004 EC,
US: §14.404-2, Subparts 9.1 and 9.4 FAR.
[47]Compare §9.404-2(h) jiss. §9.406-2 and §9.407-2 FAR to art. 45 Directive 2005/18 EC.
[48]§9.103(a) FAR.
[49]§9.104-1(c) jo. 9.104-3(b) FAR.

this purpose.[50] In some EU procedures experience is used as a selection criterion. It is easy to argue that this allows for the same possibilities as under the FAR, but this would be foregoing on the difficulties of implementing a proper experience or quality criterion, the exact purposes for erecting FAPIIS. Furthermore case law prohibits the use of these criteria during award, such that they can only be used to set minimum standards for bidders.[51] Unlike in the US, in the EU bidder behavior is not stored and non-performance during contract execution does not negatively influence the chances a bidder has of winning a new procedure. In the EU every procedure is therefore essentially a one shot game. This means that bidders can skew their bids, knowing that this might later cause them to strategically stock out, without future concerns. The personal standing criteria in the US are therefore better suited to prevent skewed bidding.

Ad II) Professional standing of the tenderer

Another rejection ground accepted in both jurisdictions concerns the ability of the tenderer to complete the contract. A tenderer's ability to complete the contract is measured in three dimensions: economic and financial, legal, and technical.[52] The grounds are the same in both jurisdictions and serve the same purpose; the contract should be awarded to a contractor that can deliver what he promises.

The economic and financial standards aim to minimize contract and simple default risk. If an agency has a big contract, a small supplier might not be able to pre-finance or complete it, so it is possible to set minimum size requirements etc. to protect the bid-taker from default risk.

Some products or services can only be supplied by a properly qualified or registered company (legal services for instance). Not having this qualification clearly makes it impossible to fulfill your promises. Being legally unable to deliver is therefore an automatic ground for rejection of the bid.

In similar vein, not having the (demonstrable) technical ability to deliver the procured goods or services makes it impossible to deliver, and as such makes one unsuited as a supplier, and automatically leads to rejection.

Prospective bidders that do not meet all requirements individually are allowed to work together and send in a bid together if they can show that the economic entity that sends the bid has the required resources at his disposal and can deliver the required products. These conditions do not differ substantially between the EU and the US and since they are not related to prices, they do not influence bid skewing.

Ad III) Essential requirements

A crucial step in the selection process looks at the offered goods and services. Since the award criterion mostly looks at price aspects, the bid-taker has to make sure that the prices compared during award are directly comparable. All bids that in one way or another try to alter the required goods, services or contract terms are to be disregarded.[53]

[50] The closest thing to an EU database on procurement is the Tenders Electronic Daily database, but it only contains the price requests and award notices.
[51] ECJ, 24 Januri 2008. C-532/06 (Lianakalis), paragraphs 26-28 and 32.
[52] EU: articles 46, 47 and 48 Directive 2004/18 EC,
US: § 14.404-(2)(l), and § 14.404-(2)(i) and § 9.104-1 FAR.
[53] EU: Art. 23 to 27 and art. 49 and 50 Directive 2004/18EC,
US: §§14.404-(2)(a) to (d) and (j).

The difference between the two award criteria in the EU is most notable here. While the "lowest price" criterion requires almost identical goods to be delivered, the "economically most advantageous tender" allows for variants to be compared trough a fixed score rule.[54] The directives do not mention essential requirements, but talk about selection criteria instead. The most important selection criteria are the technical specifications of the products, i.e. supplying what is demanded is an essential requirement. The specification of the required products can be used to exclude certain providers by setting very specific demands. To prevent abuse of these selection criteria, the technical specification of the product, leading to the technical requirements for bidders, should not precluded effective competition by too narrow a definition of the products.[55]

Under the FAR the final comparison is purely on cost aspects, selection before award is therefore stricter on variants and sets more requirements on the bids. If other criteria than price are to be evaluated, a different procedure has to be followed. Even so, it is always possible to set the requirements in a way that allows variants or to allow variants explicitly in the request for tenders.[56] Due to the strictness in selection and because the unbalanced bids provisions are structured as essential requirements,[57] the FAR has more essential requirements than the European directives.

Beyond these differences, the way the essential requirements are used is similar in both jurisdictions and apart from the unbalanced bids provisions that will be covered below, they do not hinder skewed bidding. Most essential requirements are aimed at the products to be delivered and the tenderers, not the prices in the contract.

Ad IV) Abnormally low tender

The GPA already recognizes abnormally low tenders as a potential problem, urging the procuring authority to verify with the tenderer his ability to complete the contract at the offered terms.[58] A similar logic has led to the adoption of this rejection ground in the EU.[59] The procedure in the EU is identical to the one prescribed in the GPA. The bid-taker asks information from the tenderer that demonstrates his ability and willingness to serve the contract at the offered terms. If the provided information does not convince the bid-taker, he can reject the bid. Although price is not defined by the GPA or the directives, the abnormally low tender provision is mostly interpreted to cover the final bid rather than all individual unit prices. It is seen as a protection against bidders defaulting on the entire contract, rather than a protection against manipulated bids.

Rejecting the winning bid at the end of the procedure because the price is too low seems to run counter to the idea of an open transparent and fair auction procedure. It also contrasts rather starkly with the low price selection criterion. Given that the procedure is meant to get the lowest bid, it is hard to determine what too cheap means exactly. This problem has led several Dutch judges to the conclusion that prices are only too low if they make the proposed evaluation criterion impossible.[60] These rulings imply that legally no relationship between costs and prices is required. Without a required relationship between costs and prices, there is also no restriction on bid skewing. In Italy on the other hand, bid-takers seem to interpret information required to assess the trustworthiness of

[54] Art 24 Directive 2004/18 EC.
[55] EU: ECJ, 24 January 1995, C-359/93, ECR I-157, (UNIX), paragraph 27 and also preamble 29 Directive 2004/18 EC, Art 23(2). US: § 11.002 (a) FAR and more specifically 11.105 FAR.
[56] §14.404-2 FAR.
[57] See infra section 6.
[58] Art XIII(4)(a) GPA.
[59] EU: Art. 55 Directive 2004/18 EC.
[60] See infra section 6.2.2.

abnormally low tenders as also relating to low unit prices, which would limit the ability to skew a bid somewhat by restricting the necessary downward price adjustments.[61]

The FAR does not cover abnormally low prices as a separate criterion. Price analysis is done over the entire contract, including assessing the 'cost realism' of the offered unit prices.[62] By the definition of cost realism and the desire to achieve 'fair and reasonable' prices,[63] this analysis of the contracting officer includes a rejection ground for abnormally low bids.[64] The price analysis creates an obligation on the bid-takers to assess the relationship between costs and prices, obliging them to object to unit prices that are too high or too low, and thus greatly restricts the possibilities of skewed bidding.[65]

Ad V) Award criterion

The final 'rejection-ground' is the application of the award criterion. Every procedure will end by application of the award-criterion and the proper use of this criterion is one of the most strictly regulated parts of the procedure. This sets the award criterion apart from the selection grounds mentioned before.[66] Skewed bids are trying to exploit the predictable nature of this award criterion in reverse auctions. While the selection-criteria shape the bids by setting limits to possible manipulations, the award criterion is the reason for the manipulations.

Like the GPA, the public services directive prescribes that award is based on pre-specified criteria and can only be to a bidder who is suitable, able to complete the contract and did not send in an abnormally low tender.[67] The only award criteria allowed are lowest price or economically most advantageous tender. In the last case the relative weighting of the individual criteria have to be known ex ante as far as possible, exactly like in the GPA.[68]

The FAR instructs the contracting officer to award the contract to a responsible bidder whose bid, conforming to the invitation, will be most advantageous to the Government, considering only price and price related factors included in the invitation.[69] Like under the GPA and in the EU bids have to satisfy the selection criteria to be viable and then the best bid is chosen via the award criterion. Price related factors are further defined as foreseeable costs or delays, changes made due to the bidder, the effects of making more than one award, taxes, and/or origins of supplies.[70] The definition of foreseeable costs is not as narrow as it seems at first. Foreseeable costs can vary per bidder if there is sufficient reason to have it so, which allows quite a lot of cost comparison apart from the offered prices.[71]

The basis of all of these award criteria is in a mathematical formula that is determined and made public prior to the procedure. For so far as this formula is based on objective qualities of the bids (like prices), these formula's are extremely predictable. All of them are therefore to some extend susceptible to bid skewing. By taking other things in to account than just the unit-prices, the price related factors in the US and the economically most advantageous tender criterion in the EU become

[61] See Infra 6.2.3.
[62] §§ 2.101, 14.408-2(a) and 15.404-1(d) FAR.
[63] §15.402(a) FAR.
[64] § 9.103(c) FAR.
[65] See infra section 6.
[66] E.g. ECJ, 24 January 2008. C-532/06 (Lianakalis), paragraph 26.
[67] Art. 44(1) jis. art 46, art. 47-52, and art. 55 Directive 2004/18 EC respectively.
[68] Art 44 jo 53 Directive 2004/18 EC.
[69] § 14.408-1 FAR.
[70] §14.201-8 FAR.
[71] E.g. CG US, May 22, 2000, GAO/B-284745 (Ocean Technical Services, Inc.).

somewhat less vulnerable, but never immune. As long as we want to get value for money we have to compare the offered prices and thus run the risk of attracting skewed bids with these award criteria.[72]

5.3 Bidder protection

Although the selection process has been treated as a very one-sided process so far, bidders have the possibility to respond either by asking information in relation to their rejection or in the form of launching a bid protest.[73] The way these protests are treated in the US and the EU is quite different though. The fact that the European judicial review process goes further than judicial review on US federal level was already noted above[74] and can be confirmed if one looks at bidder protests launched in the US and the EU. The GPA will not be covered here because the states are the contracting parties in this agreement and only states can launch complaints based on the GPA.

In the US the courts apply a very marginal test. Before the courts offer any injunctive relief the tenderer has to show that the decision taken by the bid-taker is totally lacking in reason, leads to an unjust award and causes him substantial damage. Furthermore, the decision should cause irreparable harm that outweighs harm caused to third parties as a result of the injunction, and the relief should be in the public interest.[75] In the US bidders have to show that actual harm has been done and that it is efficient to grant the injunction, before the court will step in.

A recent case against the City of Norwich shows quite a different picture.[76] In this case the High Court of England and Wales granted an injunction because it believed that there might be a case to be made by the bidder. According the High Court the government has a duty toward the losing bidders to investigate possible mistakes. The courts in the UK thus place a duty upon bid-takers to investigate and prove that nothing was wrong if requested. This reverses the burden of proof compared to the US situation.

This placement of the burden of proof fits very well with the difference in approach to public procurement in the US and the EU. The US places primacy in the procedure with the bid-taker, such that it is the task of the bidder to show intervention is warranted. The EU puts primacy in the market, obliging the bid-takers to show that it has not used its discretion in a way that is inconsistent with the requirements of the internal market. This reversal also means that it is a lot harder for EU bid-takers to reject a bid. They have to provide the proof the bid failed to meet a selection criterion or was abnormally low (without having a clear definition of this concept), and they face all the financial risk of possible injunctions during the procedure. In the US the burden of proof lies with the bidders and injunctions are only granted after it was shown that the governmental decision was arbitrary or capricious and it is in the interest of the government to grant the injunction, greatly reducing the risks borne by government.

[72] See infra section 6.2.1 and Appendix A.1.
[73] EU: ECJ October 28 1999, C-81/98 (Alcaltel), paragraph 43, Us: §14.408-8 jo. Sub part 33.1 FAR and § 15.506 FAR.
[74] See supra section 3.
[75] US CFC April 15 1999, No. 98-759C, (Anderson Columbia Environmental, Inc. v. U.S).
[76] EWHC 22 February 2010, EWHC 487(Ch), (Morrison Facilities Services Ltd v Norwich City Council).

5.4 Conclusions after comparison

Comparison of the selection processes revealed three reasons why US federal agencies have more possibilities to deal with, and when necessary, reject skewed bids than governmental bid-takers in the EU.

First, the FAR allows bid-takers more freedom in the selection of viable bids and in price analysis. This is necessary because under the FAR award can only be based on price, such that all selection and comparison based on other factors has to occur during the selection of viable bids. The low cost bidder should then, if a bid-taker prepared his procedure properly, offer the most beneficial bid all over. In the EU there are considerably less possibilities to use selection criteria, but the Economically Most Advantageous Tender award criterion is more flexible and allows a larger part of the selection to occur during award, giving the EU bid-takers more freedom in the award stage. Since the easiest way to deal with skewed bids, would be to outright reject them, the FAR makes dealing with skewed bids during the procedure a lot simpler.

Secondly, the large amount of legal protection awarded to bidders in the EU makes that the US federal agencies have a relatively large amount of freedom in selecting or rejecting bidders. Because judicial review is stricter in the EU, court cases against EU agencies have a larger chance of success than court cases against US bid-takers. Therefore EU agencies can expect their rejection decisions to be challenged in court more often than their counterparts in the US. Since the financial consequences are also more imminent in the EU than in the US due to the reversed burden of proof, this makes it a lot less interesting to outright reject a bid and signal to the outside world that something is happening.

Thirdly, the abnormally low tender rules that exist within the EU seem to be interpreted differently by different courts. Uncertainty about these rules, especially given the possible consequences of being sued, makes it very unappealing to bid-takers in the EU to use these rules to actively fight bid skewing. Since in the EU this is the only criterion, besides the award criterion, that deals with prices this is a big loss. It is not just that the EU’s rules are not as well suited to fight bid skewing, the rules that are there are also used ineffectively.

6. Skewed bids and Price analysis

Any solution to skewed bidding will have to identify the bids in which unit prices have been strategically manipulated and thus involve price analysis. The differences between the EU and US with regard to price analysis are rather large. While §§15.404 and further of the FAR specify in detail how price analysis is to be done, the public services directive does not even try to define what "tenders appear abnormally low" in art. 55 means. These differences mean that it is difficult to directly compare the provisions. To prevent mistakes in the comparison I will rely on analysis of case law and the underlying framework of the GPA. Although the comparison so far did reveal some differences, the common elements found through comparison with the GPA makes the procedures similar enough to be able to study the aspects surrounding price analysis in relative isolation.

To be able to do price analysis one needs reference values and the possibility to compare the bids to those references. I shall first analyze the possibilities to use price analysis in the selection process and to reject skewed bids in the GPA. Then I will see how those possibilities were implemented in the EU, before comparing them with the unbalanced bids provision in the FAR. Appendix A.1 contains a numeric example of how the required reference prices could be calculated and demonstrates the strengths and weaknesses of the proposed approaches with this example.

Construction of reference prices is mostly an economical/mathematical exercise. It can be done with reference to valid market price estimates or, if enough tenders are received, through comparing the offered prices. An example of such calculations can be found in appendix A.1.

In the rejection of skewed bids we find the reverse of the abnormally low bids case; the FAR has rules on unbalanced bidding and how to deal with it, while the GPA and the EU directives have not made any specific arrangements. This is not to say that in the GPA and Europe bid skewing and possible remedies are unregulated, but that whatever regulation applies is not specifically aimed at this particular problem. Here the common framework of the GPA is used to its full advantage, by first searching for all possibilities to deal with skewed bids in the GPA and then looking for their implementations in the EU I do not overlook any options. The implementations found in the EU are then compared with each other and the specialized unbalanced bids provisions of the FAR to find their strengths and weaknesses.

6.1 GPA

In the GPA no provisions are made for skewed bids specifically, but some legal room for maneuver is left to bid-takers. By comparing the mechanics of bid skewing and the legal possibilities to reject individual bids found in the GPA, I can identify three ways in which agencies can deal with skewed bids.

First of all, art XIII(4) GPA does not specify a calculation method for price or most economically advantageous tender. It is mathematically possible to specify award criteria in a way that reduces the chance a skewed bid wins by for instance deducting points for deviations from references prices. Such evaluation criteria fit most easily within the economically most advantageous criterion, since it allows a focus on other aspects than just the final price. A drawback of this method is that award criteria are used to weight costs and benefits. Because an award criterion should also compare the final price offered, most award criteria will always select skewed bids if these bids have low enough final prices.

Secondly one could take the approach chosen by the US legislator in dealing with skewed bids and demand market conform unit prices.[77] This demand would set an essential requirement that disqualifies skewed bids.[78] Since art. XIII(4)(c) GPA specifies that no award can be made to a bidder that does not meet the essential requirements, this would lead to direct rejection of skewed bids. The drawback of specifying strict essential requirements is that if the lower bound on prices implied by the requirement is too high, it could restrict bidders in their ability to compete on price. If, on the other hand, the upper bound implied by the requirement is too low the requirement could scare off bidders that fear they cannot make a profit at those prices. To ensure that the definition of market conform price only restricts skewing bidders the bid-taker will have to prepare the reference prices very carefully. Furthermore the way reference prices are calculated will have to be transparent and clear so they can be published in a way that meets the transparency requirements of Art XVII GPA.

Setting convenient award criteria and essential requirements will have to be done while preparing the procedure since award criteria and essential requirements have to be published in tender documentation.[79] Both approaches to stop bid skewing therefore rely on a government agency that acknowledges the possibility of receiving skewed bids prior to the procedure. Solutions of this kind make the job of procuring goods and services a lot more difficult. They mean that a government agency that wants to procure a bridge cannot just focus on ensuring that the bridge is fit for its purpose (quite a challenge to begin with), but also has to make sure that the procedure it uses is fit to acquire a complex and risky contract. In practice this means that procuring a contract will require interdisciplinary teams and a lot of preparation, both of which come with costs that could be reduced if a more ex post solution could be used.

A third option would be to qualify skewed bids as abnormally low.[80] Although the score or final bid of a skewed bid might be comparable to non-skewed bids, it cannot be comparable on all individual unit-prices. The abnormally low tender clauses are implemented to ensure that the winner is actually capable of completing the contract on the tendered conditions. Bid skewing can mean that the contractor is not really willing to complete all parts of the contract, leading to non-performance and conflict just like abnormally low tenders. Furthermore, to skew a bid often requires offering abnormally low prices on some contract parts. If one interprets the abnormally low tender provision such that it also covers all the individual prices of line-items, it could be used to reject skewed tenders. An advantage of such a rejection ground is that it is possible to apply it ex post, provided that acceptable indications of reasonable prices to base the rejection on are available. This means that the costs associated with dealing with a skewed bid only have to be borne if the bid-takers suspects that he received skewed bids. However, as with requiring market conformity, if the limits on unit prices are set too restrictively they might hamper competition. Applying the abnormally low tender provisions also does not solve the problem entirely. Smart bidders might be able to avoid abnormally low unit prices by decreasing several unit-prices a bit, instead of one unit price a lot and escape detection in this way.

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[77]The materially unbalanced provisions demands market conform prices, by rejecting bids that do not have such prices. See Infra section 6.3.

[78] XIII(4)(a) first sentence GPA.

[79] Art. XII(2) GPA.

[80] Art. XIII(4)(a) second sentence GPA.

6.2 EU

Any solution to bid skewing in the EU should fit within the legally binding framework of GPA. The GPA has three provisions that could be used as a legal basis to fight bid skewing: the bid-takers can either set an award criterion that reduces the chance a skewed bid wins, set an essential requirement that rejects skewed bids, or use the abnormally low tender provisions to warrant some detailed price analysis and possibly reject skewed bids. The possibilities to use these solution strategies in the EU will be discussed by discussing case law from the ECJ that determines the restrictions on the use of these instruments.

6.2.1 Award criteria

The EU's award criterion of economically most advantageous tenderer[81] is relatively flexible in respect of the elements it allows to be compared. Mathematically it is possible to specify an award criterion that compares the offered unit-prices with reference prices and to decrease the chance that a bid wins if the comparison shows indications of skewing. The bid-taker could post the formulas it intends to use beforehand to satisfy the publicity requirements of art 36(2) Directive 2004/18 EC.[82]

Acquiring reference prices from a neutral party, or preparing them before the procedure (as part of the cost estimation for instance), does not discriminate between bidders. If the fact that reference prices are used is known to the bidders ex ante and the reference prices can be checked ex post, there is no reason that using reference prices would interfere with the basic principles of equal treatment, non discrimination and transparency derived from the TFEU.[83] Furthermore, if reference prices are set properly, they would not hinder a bidder who offers market-conform prices. By exclusively influencing bidders that skew, an award criterion that reduces the chance of winning with a skewed bid would not violate the principle of proportionality found in art. 5 TFEU. Such a criterion exclusively influences the bidders that behave in a way contrary to the interest of the bid-taker without going beyond what is necessary to achieve this aim.

Deriving reference prices from bids received in the procedure is more difficult. Because they can only be derived after bids are received, it is impossible to know in advance what they will be. However, the ECJ has ruled that evaluating bids through a mathematical formula that is based on bids received in the procedure is not in violation of the directive per se. As long as the calculation is objective and non-discriminatory such calculations are allowed.[84] While this way of calculating reference prices allows non genuine bidders to influence the outcomes of the evaluation, it does not necessarily violate the system of the directive in the eyes of the Court.[85]

One objection could be that focusing on prices that deviate from some reference value cannot be an objective goal of a contracting authority that is searching for the best price. If it is not an objective goal it cannot be an objective award criterion and should not be used.[86] This argument, however, ignores the effect unit prices have on the incentives bidders face during contract execution. By skewing a bid, a bidder creates incentives for himself later on to strategically stock out and to use sub-optimal (but more conveniently priced) materials and labor. Skewing a bid thus actively breaks

[81] Art. 53 Directive 2004/18 EC

[82] ECJ, 24 January 2008, C-532/06, ECR I-251, (Lianakalis), paragraph35.

[83] See recital 2 of Directive 2004/18 EC.

[84] ECJ, 27 November 2001, joined cases C-285/99 and C-286/99, ECR 2001 I-09233, (ANAS), paragraph 68 to 70.

[85] ECJ, 27 November 2001, joined cases C-285/99 and C-286/99, ECR 2001 I-09233, (ANAS), paragraph 73.

[86] ECJ, 17 September 2002, C-513/99, ECR I-07213 (Concordia Bus) paragraph 64, ECJ 20 September 1988 C-31/87, ECR 4635 Gebroeders Beentjes, paragraph 37.

down the alignment of interest between bidder and bid-taker. This misalignment increases the expected execution and oversight costs of the contract and might decrease the surplus created by it. If reference prices are set to ensure the alignment of interest between bidder and bid-taker during the contract, bids that deviate from these reference prices can hurt the bid-taker and avoiding those bids is an objective goal.

6.2.2 Essential requirements or selection criteria

If a bid-taker could perfectly determine what reasonable and fair unit prices are, it would be easy to reject skewed bids. Outright rejection of bids that are found to be skewed, for instance based on a comparison with reference prices, reduces the chance of winning with a skewed bid to zero. Setting a requirement that outright rejects skewed bids can thus be seen as the most extreme case of setting an award criterion that reduces the chances of winning with such a bid. Because of the strictness of essential requirements, the chances that an inappropriate requirement hinders competition or scares of bidders are even higher then with an ill chosen award criterion.

A practical way of using selection criteria against skewed bids is by setting reserve prices. Bids that fail to stay within the bounds are deemed inadmissible and thus rejected. Reserve prices related to the final bid were relatively common in Europe and the US in 2004,[87] but to stop bid skewing reserve prices would have to be set on unit prices instead.

The GPA, the Directives and the FAR are all silent about the theoretical possibility of using reserve prices to restrict unit prices. In the US, however, the US forestry service does use reserve prices in its sale of harvesting rights to decrease the problem of skewed bidding.[88] But, since this is a sale auction, it is not covered by the Federal Acquisition Regulation and thus sheds no light on the legal possibilities to use reference prices in procurement.

The possibilities to use selection criteria to reject a skewed bid in the EU are limited. In the eyes of the ECJ there is a stark difference between award criteria and selection criteria. The Court's case law dictates that inherently economic considerations are in principle to be treated as award criteria.[89] Although there is no case law on the analysis of unit prices in the selection stage, it seems like a logical conclusion that price analysis is an economic consideration and thus has to be an award criterion.

The biggest problem for the use of reference prices as selection criteria comes from case law on abnormally low tenders. If a tender is deemed abnormally low it may be rejected. The end result of submitting an abnormally low bid is therefore the same of sending in a bid that does not meet a selection criterion. If a selection criterion is used to reject skewed bids, it is used to achieve a goal similar to the goal of the abnormally low tender provisions. Some of the conclusions drawn in the case law on abnormally low tenders should then also be applicable to selection criteria with similar aims. Otherwise, bid-takers could avoid the legal protection afforded by the inter partes comparison in the abnormally low tenders provisions by simply setting a selection criterion that achieves the same result. Following this reasoning to its logical end implies that setting a selection criterion that rejects skewed bids is legally impossible in the EU. The ECJ has consistently ruled that the abnormally low tender provisions prohibit direct rejection of bids based on mathematical formulas. [90] This direct rejection would however be the only possible consequence of setting a selection criterion that

[87] Carpineti, Piga, and Zanza (2006), Piga and Zanza (2005).
[88] Athey and Levin 2001.
[89] E.G. ECJ 20 September 1988 C-31/87, ECR 4635 Gebroeders Beentjes.
[90] ECJ, 27 November 2001, joined cases C-285/99 and C-286/99, ECR 2001 I-09233, (ANAS), paragraph 45.

disqualifies skewed bids. Adding an inter partes comparison to the rejection procedure would, however, make the rejection ground an extension of the abnormally low bids provisions rather than a selection criterion.

In the national practices other selection criteria relating to bid skewing are being formed. In The Netherlands, for instance, a lively debate about forms of skewed bidding has ensued. Although, most of these procedures end after the "kortgeding procedure" (Dutch interim injunctive or provisional procedure) and the case law is far from settled, some conclusions seem to appear from the case law none the less.[91] Dutch courts distinguish between "strategic" and "manipulative" bids. Strategic bids are bids where the profit margin is shifted from one item to the other. This definition includes most cases of bid skewing. According to the Dutch judges a bidder is allowed to send in a strategic bid.[92] Manipulative bids, that is bids that make the application of the announced award criterion practically impossible (by making it divide by zero for instance), can be rejected. The Dutch courts judge it to be an (implicit) requirement that bids do not render the chosen award criterion useless.[93] As mentioned above, this line of reasoning by the Dutch judges implies that legally there is no link required between costs and prices. This also means that the bid-taker bares the risk of vulnerability of the procedure to skewed bidding, even though there is not much he can do about this vulnerability, it is inherent in the mandatory auction procedure.

6.2.3 Abnormally low tender

The GPA classifies an abnormally low tender as a special case of the bidder being unable to complete the contract as agreed. Within the EU the provision is usually cast differently. In Italy for instance, abnormally low bids are rejected as inadmissible.[94] Although this is a different rejection ground, both the GPA and the EU-directives recognize the possibility to reject abnormally low tenders. The difference is therefore mostly semantic and even disappears if one acknowledges that any procurement process should lead to contractual obligations both sides agree upon and can deliver. As such, the ability of the tenderer to fulfill the contract is essential to a successful procurement, hence sending in a bid one cannot fulfill leads to sending in a bid that does not meet one of the essential requirements of procurement. Furthermore, the procedure of rejecting an abnormally low bid is the same in both the GPA and the Directives, such that these provisions don't materially differ.

The highlighter example in the introduction already shows that to increase the pay-off of the contract one unit price is inflated, while the other is decreased. If the agency is allowed to call the deflated unit price abnormally low and reject bids based on this observation, skewing a bid would become more difficult. This would imply that the definition of tender in the abnormally low tender provision has to be interpreted to cover both unit prices and the final bid. In this respect the ECJ has noticed that the directives do not define price and leave the calculation method to the member states.[95] Furthermore when art. 55(1) of the public services directive mentions the information bid-takers should ask from bidders, it clearly speaks about the "constituent elements of the tender which it considers relevant ". This choice of words suggests that the bid-taker does not have to look at the final price as stemming from a black box, but can look at all individual unit prices that determine it. This interpretation is also in line with the interpretation of the Court on the old Art. 29(5) of Directive

[91] See also the discussion of "strategische inschrijvingen en irreële inschrijvingen"in Chen 2007, p7.
[92] Vzr. Rb Utrecht 13 july 2007 LJN: BA 7015 Ordina/EKD.
[93] Vzr. Rb Groningen 3.8.07 LJN BB 2292 Mug/Gem. Groningen.
[94] E.g. ECJ, 27 November 2001, joined cases C-285/99 and C-286/99, ECR 2001 I-09233, (ANAS), paragraph 13.
[95] ECJ, 27 November 2001, joined cases C-285/99 and C-286/99, ECR 2001 I-09233, (ANAS), paragraph 73.

71/305.[96] Analyzing unit prices in the tenders in relation to the abnormally low bids provision is acceptable in the system of the directives.

In the discussion about the award criteria[97] I already argued that bid-takers are allowed to use references prices. The wording of and case law on the abnormally low tender provision also allows bid-takers to evaluate the individual unit prices. Using reference prices to determine whether or not unit prices are abnormally low therefore does not violate the system of the Directives. Furthermore, the obligation the directive places on agencies to request information on how the prices were set before rejecting them,[98] combined with the obligation to motivate rejection,[99] serve as guarantees that the provision will be used proportionally. Although I have not seen any procedure where the provisions were used in this manner and Dutch case law seems to be going the other way, European law seems to allow the application of the abnormally low tenders provision to unit prices. This application of the abnormally low tender provision could be used to stop some skewed bids.

Using the abnormally low tender provision in this way is also quite logical if one looks at the rest of the selection process in the EU. To ensure that the bidder is capable of completing the contract at the terms in the tender, the directives specify rejection grounds based on the professional standing of the tenderer and reject abnormally low tenders. But, unlike the FAR, the directives do not use a price definition that ensures that the tenderer is also willing to complete all parts of the contract at the terms in the tender. The only way to ensure that the bidder is willing to deliver in the current procedure is by application of the abnormally low tender provision to unit prices.

6.3 Comparison with the US unbalanced bids provisions

The FAR allows the rejection of skewed, or 'materially unbalanced', bids on the ground of unreasonableness of the price.[100] Since these are specialized provisions to rejects materially unbalanced bids they will prevail over other methods to reject skewed bids and any discussion of other methods to reject skewed bids in the US is without relevance. This section will show the differences between the three possibilities to not select skewed bids discussed above and the unbalanced bids provisions under the FAR.

Subpart 15.4 of the FAR explains in detail how price analysis can show whether or not a price is reasonable, but the clearest definition of materially unbalanced stems from case law. Case law has determined that before a bid can be rejected as materially unbalanced, two conditions have to be satisfied. First, the bid has to be mathematically unbalanced, which means that compared to the estimates of the government the unit prices must show clear indications of manipulation. Second, the unbalance must have a material (negative) effect on the government's budget, bid-takers have to show that accepting the mathematically unbalanced bid can result in a higher total cost than accepting another bid.[101] For this cost calculation the agency is allowed to take in to account all costs related to the contract, including contract management and legal costs, not just the final bill.[102] Here

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[96] ECJ, 10 February 1982, Case 76/81, ECR 417, (Transporoute), paragraph 17 and ECJ, 27 November 2001, joined cases C-285/99 and C-286/99, ECR 2001 I-09233, (ANAS), paragraph 46.
[97] See supra 6.2.1.
[98] Art 55(1) Directive 2004/18 EC and ECJ, 10 February 1982, Case 76/81, ECR 417, (Transporoute), paragraph 17 and 18.
[99] Art. 41(2) Directive 2004/18 EC.
[100] § 14.404-(2)(f) jo. § 14.404-(2)(g) jo. 15.404-1(g) FAR.
[101] CG US August 25 1988, B-231618 (All Star Maintenance, Inc.).
[102] CG US, May 24 1996, B-271215 (Nomura Enters., Inc.).

the difference between the price definitions in the EU and US becomes clear again. Relatively broad definitions of "price" and "price related aspects" have been accepted in the US for quite some time, while within in the EU the ECJ only ruled upon the possibility of evaluating unit prices in 2001 and the definition of price is limited to the prices offered.[103]

In function the unbalanced bids provisions of the FAR looks like the abnormally low tender provisions in the Directives. Its purpose is to protect bid-takers from bids with problematic prices and counterparts that cannot or do not want to deliver. There is a difference between the two provisions in the focus of the two provisions. While the EU's abnormally low tender provisions only look at low prices, the unbalanced bids provisions of the FAR look at both high and low prices. In fact, in interpretations the US courts generally give more attention to high prices then to low prices since they can directly hurt the government budget during normal execution of the contract.[104]

In form, the materially unbalanced bid provisions are treated like an essential requirement leading directly to rejection. Although 14.404-2(g) FAR speaks about "may reject", the clauses are interpreted by the Comptroler General to be an imperative, bid-takers have to reject materially unbalanced bids.[105] This interpretation, although not strictly binding, has been acknowledged in federal court.[106] In practice the direct rejection of unbalanced bids is often mentioned in the solicitation for bids and is then applied if the bid-taker deems it necessary. This sets it apart from the EU's abnormally low tender rules, where rejection based on price analysis can only follow after an inter partes comparison.

[103] See supra section 6.2.3 abnormally low tenders.
[104] E.G. US CFC April 15 1999, No. 98-759C, (Anderson Columbia Environmental, Inc. v. U.S).
[105] CG US May 31 1989, B-234780, (Northwest Cleaning Serv).
[106] US CFC April 15 1999, No. 98-759C, (Anderson Columbia Environmental, Inc. v. U.S).

7. Law and economics of the EU acquisition process

In designing the procurement procedure the EU seems to have chosen for a mechanism that is transparent, non-discriminatory and, in standard economic theory, efficient in terms of its allocation: an auction that assigns the contract to the cheapest supplier. This procedure can be explained easily, the assignment rule is very tractable and it treats al contestants that are similar sufficiently similar. However, as a mechanism an auction has some potential weakness. As the example in the introduction shows, the desirable qualities an auction has in simple situations do not automatically transfer to more complex settings. Consequently, this supposedly fair and transparent procedure can have a tendency to favor the bidders that have more private information or are willing to create and take inefficient amounts of risk. This outcome is undesirable both from a welfare perspective and from the perspective of the procurement officer and budget holder confronted with the resulting problems.

Economic papers that demonstrate the allocative efficiency of the procedure usually ignore other costs than the bill. Even if an auction allocates a contract to the efficient supplier, the cost to create, execute and oversee the progress on this contract can still make the choice for this mechanism sub-optimal. Under the FAR some of the other costs relating to acquisition processes have been dealt with through the selection process. By using info on past performance through FAPIIS and doing more thorough price analysis, the US federal agencies are better able to align the interests of their contractors with their own interests than their European counterparts.[107]

By focusing only on the allocation and not the process before and after the allocation of the contract, the European directives present an overly simplified view of acquisition. This simplified view also presents itself in the rejection ground of the abnormally low tenders provision of art. 55. By not defining its scope of application, it seems to suggest that only the final bid is taken into account. While this is sufficient if the reverse auction is a simple one with only one price dimension, it is rather short sighted if it is more complex and has many unit prices. In its wording the abnormally low tender provision seems to be designed for simple auctions only. This design makes the provision ineffective in more complex settings, it cannot prevent skewed bids for example.

The procurement rules have a large impact on the other stages of the acquisition, which is one of the reasons the FAR in the USA is so large. A mismatch between the settings the rules were written for and the actual situations in which they are used can create a lot of problems. Skewed bidding and strategic default on parts of the contract are notable examples of these problems. By focusing on a price definition that is too narrow, the EU has created possibilities for bidders to game the system.

Not having a database like FAPIIS creates another problem. Within the EU it is extremely hard to evaluate the efficiency and effectiveness of the public procurement process, since no readily processable data is available. This lack of data is quite striking given the importance of public procurement for the European market. To this date the only empirical analysis done on the effectiveness and efficiency of the procurement procedures installed in 2005 is a single report commissioned by the European Commission[108] and it suffers from several serious shortcomings. Most notably, the database that was used for this analysis, the EU's Tenders Electronic Daily[109]

[107] Klein and Leffer 1981, Doni 2006.
[108] PwC, London Economics and Ecorys, 2011
[109] http://ted.europa.eu/TED/main/HomePage.do

combined with the results of a survey amongst procurement professionals, does not contain any outcome information beyond the winning bid. This means the analysis does not consider the final bill, prices paid for line-items in the contract, or performance of the bidders. The report therefore chooses to focus on descriptive statistics and a survey driven analysis of perceived and self-reported procedural efficiency of the contracting procedure. It answers questions whether the respondents think public procurement procedures take longer or are more expensive to run than private procurement procedures. Although the answers to these questions are interesting in their own right, they will never be able to answer the relevant questions about whether or not we get value for tax money. If the EU seriously wants to be able to evaluate and improve the procurement process in a systematic way, systematic storing of data is unavoidable.

The current procedure in the EU sets a high quality standard for the pre-procurement preparations on the side of the government. The description of the project has to be precise and complete, since any misspecification can cost a lot of money.[110] Furthermore, there is no competition after contract variations, so the altered contract is not open to competition for other bidders, which runs contrary to the concept of an open and transparent procurement procedure. Therefore changes to the contract after selection, due to unforeseen circumstances or imprecision in the preparation, decrease the legitimacy of the original selection procedure.

The procedure also sets a high standard of preparation for the bidders. The bid-takers prepare large amounts of paperwork even before the bidders are aware of the project. This forces bidders to digest large amounts of information in a limited amount of time. They too have to be aware of both the legal and technical requirements and the technical and economic consequences of these requirements. Furthermore, the set-up of the relatively simple procedure, combined with very direct competition and interaction with competitors, requires them to put in a lot of effort to be able to win the contract in the first place.

The procurement process is not the end of the acquisition process. The government will have to monitor the contractual counterpart to see whether or not it delivers as promised. Although this is the case for all acquisition processes, no matter how they are structured, this problem seems to have increased in Europe since 2005. A simple indication is in the amount of cases following award before the General court and the Court of Justice of the EU that have shown a steady increase since 2005.[111] Game theoretically this is not much of a surprise, for most countries in Europe the amount of discretion in public procurement has gone down. Perhaps more importantly, it is no longer possible to disqualify possible bidders based on previous experiences with them unless they went really far astray and actually committed crimes.[112] Short of committing crimes or tax fraud, every procedure is simply a new opportunity for contractors to obtain a contract. Punishment strategies that have proven to be very useful to foster cooperative behavior in repetitive games cannot be used. In the US policy makers seem to have realized this and invested heavily in developing FAPIIS to track past behavior of contractors. Since Europe has no similar system, its procurement process is, in essence, a one-shot game and thus suffers from gaming behavior typical to one shot games.

Bid skewing is a prime example of gaming behavior, but gaming also occurs later in the acquisition process. If the government agency made a mistake, or if the side of the river where the bridge will be build is different than expected, or something happens that was not foreseen in the drafting of the

[110] A thorough analysis of this issue was done in Bajari, Houghton & Tadelis 2007.
[111] Calculations of the author, based on EUR-Lex data, see appendix A.3.
[112] Supra 5.2 ad i.

contract notice (the contract is inherently incomplete), negotiations will have to take place. Here also the one-shot nature is very ineffective in fostering cooperative solutions. In fact, the one shot nature of the contract means that for a bidder extra-work or change orders are a prime opportunity to make extra profit. Rational bidders will even go so far as to bet on getting those orders to compensate them for sending in low bids and earn extra profits.[113]

After this dismal analysis it might come as a surprise that the European procurement procedure still works at all, but luckily it does. Contracts are signed, products are procured, but it takes a lot of effort and communication between people of different disciplines to do so effectively. Politicians and bureaucrats define the needs, technical specialists describe the items to be procured, costs specialists on both sides figure out (reasonable) prices, risk analysts deal with uncertainty and possibly bid skewing, lawyers deal with the regulatory frame and draft and analyze the contracts, more technical specialists deliver the acquired items and check the quality and, increasingly, managers and economists have to oversee the whole mess and try to make some sense out of it all. This makes procurement a difficult and costly task.

It is not the case that a reverse auction is inherently a bad procedure. Auctions do have many good qualities, they are famed for their allocative efficiency in a wide range of (usually simple) settings, they are transparent and they can provide a level playing field to competitors. The idea to harness the power of these procedures can only be applauded. For simple products that are easily specified the further development of dynamic purchasing systems and particularly e-procurement with its fast and mechanic rules clearly has the future. If products or contracts are more complex, it is likely that more complex procedures are required. When presented in this fashion, the one-size-fits-all approach to procurement is a very strange notion indeed. Why would a mechanism that is optimal to trade any amount of simple a homogenous goods on a spot market, be equally efficient in concluding a complex project that is worth several billion Euro, includes both goods and services and will be executed over a period of several years? In procurement like any other policy area it is important to realize the limitations of the tools used. The government is going to have to be able to treat different situations differently.

Despite the current effort in designing fair and transparent procedures, it seems impossible to ban all discretion from the side of the government in these procedures and still get favorable outcomes all the time. Binding all the decision rights in a predictable fashion simply opens up to many possibilities for gaming. The current rules do allow some maneuvering space to the bid-takers and governmental agencies would be well advised to make use of the options they have more often.

[113] Athey & Levin 2001, Renes 2011.

8. Policy implications

Unlike the FAR the EU does not have any specific rules on skewed bidding. This does not mean that skewed bidding cannot be dealt with at all with the EU's current rules. By clarifying the possibilities of applying the abnormally low tender rules to unit prices or developing award criteria that reduce the possibility to win with skewed bids, skewed bidding could be made a lot less interesting to bidders in the EU.

It seems, however, that the problem of bid skewing could be better dealt with by rules specifically aimed at skewed bids. It is alluring to simply copy the set of tried and tested materially unbalanced bids provisions of the FAR. However, the current level of bidder protection and judicial review in the EU could not be maintained within the FAR's unbalanced bids provisions. The direct rejection that follows from the unbalanced bids provisions in the FAR would be considered unproportional within the EU. Given that the FAR was written to streamline effective acquisition, however, it is hard to argue that the unbalanced bid provisions do not work well in the US.

If we compare the possibilities to deal with skewed bids offered by setting appropriate award criteria and by applying the abnormally low bids provision to unit prices, some clear differences appear. The award criteria can focus both on the price increases and the price decreases that shape a skewed bid, while the abnormally low bids provision only covers the decreased prices. However, a proper award criterion is very hard to set and it does not solve all problems. Any award criterion that attaches weight to the tendered price can be made to accept skewed bids, as long as a low enough final price is offered. The abnormally low tender provision allows the rejection of a bid based on an undesirable quality, no matter what other properties the tender has. Simultaneously the inter partes comparison in the abnormally low tender provision allows a high level of legal protection for bidders and could be used to create room for innovative methods and genuinely low bids. These appealing properties of the abnormally low tender rules allows a measure of ex post weighting of the risks and rewards of accepting a remarkably low bid and they allows decisions to be made based on sufficient information. They also ensure enough bidder participation and enough possibilities for ex post control to keep the procedure viable, non-discriminatory, transparent and fair. The use of such a procedure would thus not violate the basic principles derived from the TFEU.

The EU could create substantive rules on skewed bidding and integral price analysis in similar vein as the US, but then along the procedural lines of the abnormally low bids provision. The appeal of the EU's abnormally low bids procedure is mostly in its procedural properties, while the substantive part of setting an appropriate award criterion, is the strength of integral price analysis. Combining the two will create fairer prices by shunning both abnormally low and unreasonably high unit prices. By basing this procedure on the abnormally low tenders provision, the EU would extend its existing price analysis to create integral price analysis. This way much of the current case law on this procedure can be maintained. This solution salvages the high level of protection against governmental favoritism that the internal market requires, without adding new procedures and thus without additional procedural uncertainty. Simultaneously it would greatly clarify the possibilities of applying price analysis to both high and low unit prices, so that price analysis can be more effectively used.

The current EU database on public procurement does not provide the data necessary to evaluate the effectiveness of EU public procurement in a systematic way. If the EU wants to improve its procurement policy based on analysis of the current procedure, it should store more data on public procurement more systematically then it does now. The database that should be created for this

could simultaneously be used to bring desirable qualities of repetitive games into the procurement process. By tracking bidder behavior in acquisition processes, bidders would be incentivized to be more cooperative in finding solutions to problems after the award of the contract. Since by recording uncooperative behavior the governmental agencies can reduce bidder's chances of getting a future contract.

9. Conclusions

Procurement is the process of buying goods and services. Any procedure of public procurement should therefore aim to get value for tax money. The ulterior goals attached to public procurement, such as transparency, fairness and competitiveness [114] can be interpreted in several ways. One could argue that they help to achieve the value-for-money goal by creating the possibility of ex-post, decentralized monitoring by the losing bidders. Alternatively, they could be interpreted as supportive of a different goal altogether. The second case seems to apply to the EU, where harmonized procurement policy is presented as a medium for completing the internal market, as well as to the GPA that does not even mention any value-for-money goal. The FAR, on the other hand, clearly states its aim is to attain the value-for-money.

The differences in goals between the US and the EU do not necessarily imply difference in the type of rejection grounds for individual bids. However, the way these rejection grounds are treated differs substantially between the jurisdictions. A recurring theme seems to be that the governmental entities under the FAR have more freedom to reject individual bids than the governmental entities in the EU.[115] This freedom is visible in the room for maneuver the agencies have in price analysis, the larger discretion in determining costs per bidder and the large hurdles a post award protest has to overcome in the US compared to the EU. These differences are easily explained by perspective the jurisdictions take toward the goals of public procurement. If procurement is aimed at getting value-for-money, as under the FAR, the primacy in the procedure should be with the governmental agency that is supposed to attain this goal. The rules should prevent excesses without hindering the acquisition process, which only requires a marginal judicial review by the courts. The European goal of completion of the internal market puts the primacy with the market participants that have to be protected against governmental favoritism and discrimination, this goal warrants a narrow definition of rejection grounds and strict judicial review. As such the interpretation of the rejection grounds found in the regulatory frameworks is quite different, even though they seem semantically similar.

Due to the relatively limited amount of freedom of EU bid-takers to reject skewed bids, I suspect that bid skewing is more prominent in the EU than in the US. This would imply that bid-takers in the EU have more conflicts with their bidders, budgets in the EU are harder to manage and bid-takers in the EU will face more price risk and higher prices on average. Unfortunately there is no data available in the EU to verify my predictions. To improve the acquisition process in the EU in the future a database like FAPIIS would be very useful. The same database could be use to systematically evaluate and improve the European acquisition and procurement process.

European bid-takers that acknowledge the possibility of receiving skewed bids are not entirely powerless, however. They can set up the procedure in a way that strongly discourages the use of this strategy. Either by specifying appropriate award criteria or by strictly applying the abnormally low bids provisions the problem can be diminished, but neither strategy solves the problem completely.

Copying the tried and tested unbalanced bids provisions in the FAR seems tempting for the EU, but would be a mistake. The difference between the procurement approaches between the two jurisdictions is too big. Still, many lessons can be learned from the American approach to price analysis and data collection. A first lesson could be in the substantive part of price analysis in the US.

[114] E.g. recital 2 Directive 2004/18 EC.
[115] See also Hoffman 2011, Verdeaux 2003.

Applying price analysis techniques as the US, but along the procedural lines of the European abnormally low bids provision could be a promising step forward. Applying price analysis in this way combines the strength of integral price analysis with sufficient levels of legal protection. It would make bid skewing a lot less appealing for bidders, without violating the basic principles of the European Union of transparency, non-discrimination and proportionality and without violating any of the requirements of the internal market.

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EWHC 22 February 2010, EWHC 487(Ch), (Morrison Facilities Services Ltd v Norwich City Council)

US

Comptroller general

CG US August 25 1988, B-231618 (All Star Maintenance, Inc.)

CG US May 31 1989, B-234780, (Northwest Cleaning Serv)

CG US, May 24 1996, B-271215 (Nomura Enters., Inc.),

CG US May 22 2000, GAO/B-284745 (Ocean Technical Services, Inc.)

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US CFC April 15 1999, No. 98-759C, (Anderson Columbia Environmental, Inc. v. U.S)

10.4 Consulted web pages

http://ec.europa.eu/internal_market/publicprocurement/modernising_rules/evaluation/index_en.htm

http://www.wto.org/english/tratope/gproce/gpgpae.htm

http://www.wifcon.com/pd144042g.htm

http://ec.europa.eu/internal_market/publicprocurement/docs/modernising_rules/cost-effectiveness_en.pdf

http://www.europadecentraal.nl/menu/497/Aanbestedingsprocedures.html

http://news.bbc.co.uk/2/hi/uk_news/england/norfolk/8529252.stm

http://eur-lex.europa.eu/Result.do?idReq=4&page=16

http://www.pannone.com/media/articles/construction-and-engineering/public-procurement-a-level-minefield

Appendices

A.1 Mechanics of the solutions to bid skewing

In the main text of my thesis I discuss some possible solutions to bid skewing without going into depth about them, or the mathematics behind them. In this appendix I will use a simple example to demonstrate the solutions and the problems I mention. Insightful analysis of possible price analysis strategies are also studied in Chang 2004 and Chang et al. 2006.

Starting again from the office supply example, imagine a bundle containing 3 line items: pens, highlighters and pencils. For clarity of the exposition, but without loss of generality, I assume that the bid-taker expects to need equal quantities of all items and thus all line-items have equal weight in the score function. There are 5 bidders: A till E. Bidder A knows that there will be more pens sold and (correctly) has expected quantities as listed below, consequently A skewed his bid. The following bids are tendered:

	A	B	C	D	E	weight	Expected quantity A
Pen	2.1	1	1	1	1	**1000**	**2000**
Pencil	0.1	1.5	2	1. 5	1.5	**1000**	**1000**
Highlighter	1	1	1	0.75	1.5	**1000**	**1000**
Final bid/score	3200	3500	4000	3250	4000		
Expected costs	5300	4500	5000	4250	5000		

The score function would select A as winner, while if we look at the unit prices for line-items the offer is clearly different from the others. A pen that costs 1 with all other bidders costs 2 with A, while bidder A's pencils are remarkably cheap. If we would use the expected quantities to calculate expected costs it is clear that we probably have a skewed bid, in this calculation A is not the cheapest but the most expensive bidder.

Calculating whether or not a bid is skewed is impossible without some sort of reference to compare the bids to. This is done informally in the above paragraph, but will have to be done more formally and tractably (such that it can be made consistent and transparent) in actual procedures. This will require the bid-taker to specify reliable reference values. The most economically correct method of calculation requires the cost structure of the companies. But, if the cost structure of the companies were known no procurement procedure was necessary, we could just appoint the most efficient supplier. More realistic ways of determining these reference values are either setting them ex ante based on market information, or determining them through the procurement procedure itself.

Setting them ex ante could lead to some problems with bidders. If the bid-taker would for instance set a reference value of 1 for pencils he would be punishing all bidders except A (who guessed right in this case). Such reference values might scare off bidders like C, who would have to make a significant downward adjustments in his price, and thus reduce competition in the procedure. On the other hand setting a lower bound on unit prices, like 1 for highlighters, would hinder bidders like D in their ability to compete on prices.

It is also possible to use statistics derived from the bids to determine reference values. The example below uses the average unit prices and standard deviations of unit prices to determine normal bounds for market prices. Two big advantages of this type of calculation are that they can be done mechanistically, and they can be done ex post. This makes the procedure transparent, fair and easy

to implement. A drawback is the possibility of bidders to influence the procedure by sending in phony bids. This is not an insurmountable problem though. By specifying proper criteria the procedure can be made quite robust. For instance by using median prices and quartiles instead of averages or, by applying the procedure iteratively and removing rejected bids from the analysis after each iteration, the references would become unaffected by extreme outliers.

Award criteria

Using the bids, it would be relatively easy to set an award criterion that punishes for skewed bidding by taking the sum of the prices times the weights (as above) and then applying a punishment to bidders whose prices deviate to far from the average prices. A reasonable penalty in this situation could, for instance, increase the unit prices with one cent for each cent that the bidder is further away from the average price than 1.5 times the standard deviation. In my example that would lead to the following lower and upper bound for unit prices that can be tendered without a penalty:

	Average price	**Std. dev.**	**Lower bound**	**Upper bound**	**Penalty A**
Pen	1,2	0,4	0,6	1,8	0.3
Pencil	1,32	0,64	0,36	2,28	0.26
Highlighter	1,05	0,244949	0,682577	1,417423	0

And this score rule would lead to the following scores:

A	**B**	**C**	**D**	**E**
(2.1+0.3)*1000 +(0.1+0.26)*1000 +1*1000=3760	3500	4000	3250	4000

If one compares these with the expected costs it, the ranking of bidders has clearly improved, the one expected to be most cheapest, D, is actually selected.

Abnormally low bids applied to unit prices

Applying the abnormally low bids provisions to the bids above, for instance by saying that every unit price below the lower bounds is abnormally low, would reject bid A. In the main text I argue that this does not solve all problems tough. The reason is that bidder A might be a bit smarter than this and start skewing differently. By reducing not just his price of pencils, but also of highlighters he could achieve an effect as below:

	A	**B**	**C**	**D**	**E**	Avg. price	std. Dev	Lower bound	Upper bound	Expected quantity
pen	1,7	1	1	1	1	1,14	0,28	0,72	1,56	**2000**
pencil	1,1	1,5	2	1,5	1,5	1,52	0,285657	1,091514	1,948486	**1000**
highlighter	0,4	1	1	0,75	1,5	0,93	0,36	0,39	1,47	**1000**
Final bid/score	3200	3500	4000	3250	4000					
Expected costs	4900	4500	5000	4250	5000					

This way A could still win the procedure, even though he is not the cheapest. As one can tell by looking at the expected costs, the score rule reduces the amount of profit A can make. It does not remove the incentive to skew, however. As such this solution can reduce the problem, but not solve it.

Essential requirements: Reserve prices or materially unbalanced bids

Note that using the lower and upper bounds together, would have always mark bidder A's bid as skewed or mathematically unbalanced. Then checking the second requirement, the risk of a negative effect on the government budget, would have revealed A to be materially unbalanced. In the US A's bid could have been rejected. By also focusing on the high prices, bid-takers could stop bidders from increasing prices. Since this is the profitable part of skewing, this makes skewing a bid a lot less interesting.

In the EU the same analysis could be done and the same result reached if reserve prices could be set, essentially requiring acceptable bids to be within the bounds. The case law on abnormally low bids would prohibit this practice, since this would imply direct rejection of bidders based on a mathematical formula.[116] Applying the integral price analysis within the procedure of the abnormally low bids provisions would be acceptable according to this case law and could also reject A's bid, but only after the inter partes comparison. It seems unlikely however that A gives a plausible explanation of why his price for highlighters is almost half of the second cheapest tender, while his pens are 70% more expensive than the second most expensive unit price. Anyone with some common sense should be able to see that those prices are weird, or more correctly, that those prices are abnormal.

[116] See main tekst, section 6.2.2 essential requirements.

A.2 Table of Equivalence for Directives 2004/17 EC and 2004/18 EC

	2004/18	2004/17	
Titel I, Definitions and general principles			
Definitions	art 1	art 1	
Principles of awarding contracts	art 2	art 10	verbatim
Granting of special or exclusive rights: non-discrimination clause	art 3		
Titel II, Rules on public contracts			
Chapter I, General provisions			
Economic operators	art 4	art 11	verbatim
Conditions relating to agreements concluded within the World Trade Organisation	art 5	art 12	similar
Confidentiality	art 6	art 13	similar
Chapter II, Scope			
Section 1 — Thresholds			
Threshold amounts for public contracts	art 7	art 16	
Contracts subsidised by more than 50 % by contracting authorities	art 8		
Methods for calculating the estimated value of public contracts, framework agreements and dynamic purchasing systems	art 9	art 17	similar
Section 2 — Specific situations			
Defence procurement	art 10		
Public contracts and framework agreements awarded by central purchasing bodies	art 11	art 29	
Section 3 — Excluded contracts			
Contracts in the water, energy, transport and postal services sectors	art 12	art 26	
Specific exclusions in the field of telecommunications	art 13		
Secret contracts and contracts requiring special security measures	art 14	art 21	similar
Contracts awarded pursuant to international rules	art 15		
Specific exclusions	art 16		
Service concessions	art 17	(art 18)	
Service contracts awarded on the basis of an exclusive right	art 18	art 25	similar
Section 4 — Special arrangement			
Reserved contracts	art 19		

Chapter III, Arrangements for public service contracts			
Service contracts listed in Annex II A	art 20	(art 31)	verbatim
Service contracts listed in Annex II B	art 21	(art 32)	verbatim
Mixed contracts including services listed in Annex II A and services listed in Annex II B	art 22	(art 33)	verbatim
Chapter IV, Specific rules governing speicifications and contract documents			
Technical specifications	art 23	art 34	similar
Variants	art 24	art 36	similar
Subcontracting	art 25	art 37	verbatim
Conditions for performance of contracts	art 26	art 38	verbatim
Obligations relating to taxes, environmental protection, employment protection provisions and working conditions	art 27	art 39	similar
Chapter V, procedures			
Use of open, restricted and negotiated procedures and of competitive dialogue	art 28	art 40	
Competitive dialogue	art 29		
Cases justifying use of the negotiated procedure with prior publication of a contract notice	art 30		
Cases justifying use of the negotiated procedure without publication of a contract notice	art 31		
Framework agreements	art 32		
Dynamic purchasing systems	art 33		
Public works contracts: particular rules on subsidised housing schemes	art 34		
Chapter VI, Rules on adverstising and transparency			
Section 1 — Publication of notices			
Notices	art 35	art 42	similar
Form and manner of publication of notices	art 36	art 44	similar
Non-mandatory publication	art 37		
Section 2 — Time limits			
Time limits for receipt of requests to participate and for receipt of tenders	art 38	art 45	similar
Open procedures: Specifications, additional documents and information	art 39	art 46	verbatim
Section 3 — Information content and means of transmission			
Invitations to submit a tender, participate in the dialogue or negotiate	art 40	art 47	
Informing candidates and tenderers	art 41	art 49	similar
Section 4 — Communication			

Rules applicable to communication	art 42	art 48	
Section 5 — Reports			
Content of reports	art 43		
Chapter VII, Conduct of the procedure			
Section 1 — General provisions			
Verification of the suitability and choice of participants and award of contracts	art 44	(art 51)	
Section 2 — Criteria for qualitative selection			
Personal situation of the candidate or tenderer	art 45		
Suitability to pursue the professional activity	art 46		
Economic and financial standing	art 47		
Technical and/or professional ability	art 48		
Quality assurance standards	art 49		
Environmental management standards	art 50		
Additional documentation and information	art 51		
Official lists of approved economic operators and certification by bodies established under public or private law	art 52		
Section 3 — Award of the contract			
Contract award criteria	art 53	art 55	similar
Use of electronic auctions	art 54	art 56	similar
Abnormally low tenders	art 55	art 57	verbatim
TITLE III, Rules on public works concessions			
Chapter I, Rules governing public works concessisons			
Scope	art 56		
Exclusions from the scope	art 57		
Publication of the notice concerning public works concessions	art 58		
Time limit	art 59		
Subcontracting	art 60		
Awarding of additional works to the concessionaire	art 61		
Chapter II, Rules on contracts awarded by concessionaires which are contracting authorities			
Applicable rules	art 62		

Chapter III, Rules applicable to contracts awarded by concessionaires which are not contracting authorities			
Advertising rules: threshold and exceptions	art 63		
Publication of the notice	art 64		
Time limit for the receipt of requests to participate and receipt of tenders	art 65		
Title IV, Rules governing design contests			
General provisions	art 66		
Scope	art 67		
Exclusions from the scope	art 68		
Notices	art 69		
Form and manner of publication of notices of contests	art 70		
Means of communication	art 71		
Selection of competitors	art 72		
Composition of the jury	art 73		
Decisions of the jury	art 74		
Title V, Statistical obligations, executroy powers and final provisions			
Statistical obligations	art 75	art 67	similar
Content of statistical report	art 76		
Advisory Committee	art 77	art 68	similar
Revision of the thresholds	art 78	art 69	similar
Amendments	art 79	art 70	similar
Implementation	art 80	art 71	similar
Monitoring mechanisms	art 81	art 72	similar
Repeals	art 82	art 73	similar
Entry into force	art 83	art 74	similar
Addressees	art 84	art 75	similar

A.3 Cases on procurement on EUR-Lex

year	# cases
1981	1
1982	4
1983	1
1984	3
1985	7
1986	6
1987	0
1988	2
1989	2
1990	4
1991	3
1992	4
1993	7
1994	3
1995	2
1996	5
1997	2
1998	3
1999	3
2000	3
2001	1
2002	6
2003	8
2004	4
2005	6
2006	3
2007	9
2008	16
2009	7
2010	13
2011	20

Website consulted on 20-12-2011.

To get an idea of the effect the directives 2004/17 and 2004/ 18 EC have had on the amount of legal procedures related to procurement I consulted the EUR-lex.eu database on cases at the Court of Justice of the European Union and the General Court. I searched for the keyword "procurement" and simply counted the number of cases listed for each year since 1981. The results of this count can be seen in the table on the left.

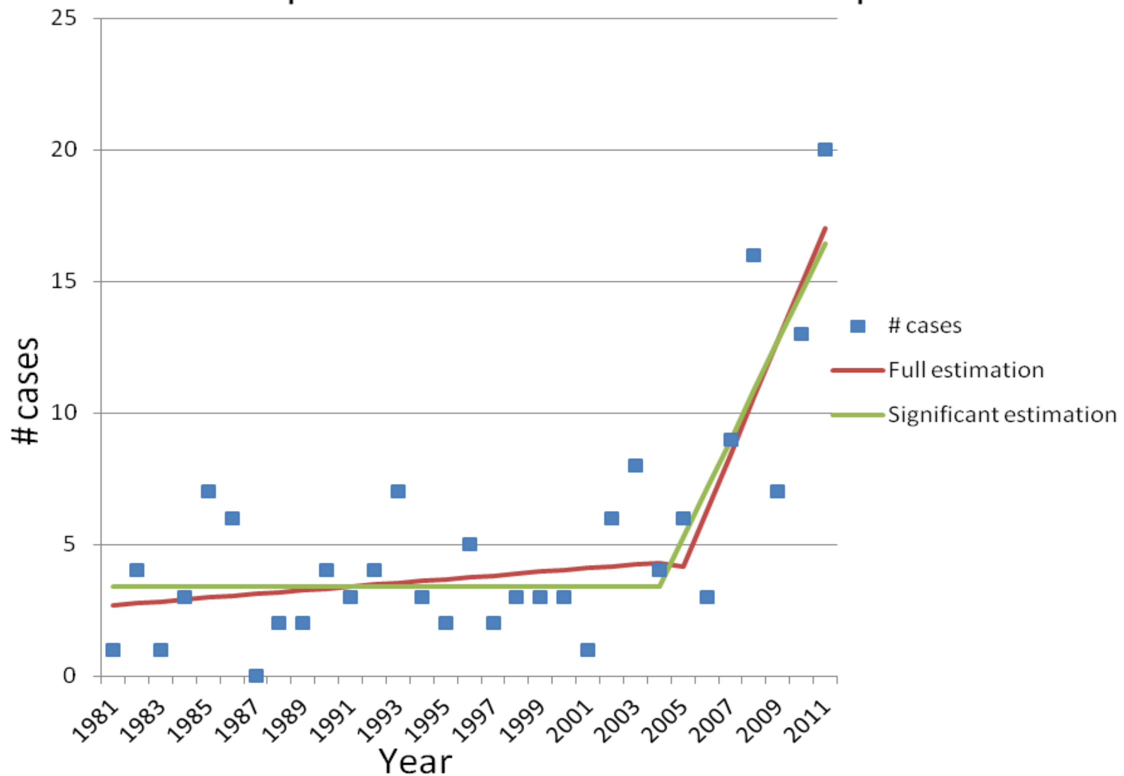
Applying the techniques of linear regression I searched for a line that would best describe the time series I created. If the directives changed the amount of procedures the time trend should show a break near 2005, the first year of implementation in some EU member states. A formal Chow stability test indeed rejects the hypothesis of a stable trend around 2005 ($p<0.001$). This test does not tell me what the best description of the data looks like.

In a next regression I tried to fit a straight lines through the data, while allowing this lines to have a jump or kink point at 2005. I regressed the amount of cases against a constant, a time trend over the entire period, a indicator for the post 2005 period and a second time trend starting in 2005. The regression shows a significant intercept and a time trend since 2005 (see table: Full regression). Essentially this implies that since 81 the amount of legal conflict in about procurement in European courts has varied around a more or less constant average till 2004, while since 2005 more cases started coming in. The increase that begins in 2005 seems to form an upward trend.

I redid the regression with only the significant regressors (see table: Significant regressors). Both the explanatory variables and the regression as a whole are highly significant ($p<0.001$) and show the same pattern. The new estimation has a higher adjusted R-square than the original one and judging by the standard error it is an (insignificant) improvement over the full regression.

The regression output is also displayed below. Judging from the regression output there are indications that the new procurement rules have increased the amount of legal conflict between bidders and bid-takers. Before 2005 there was no clear trend in the amount of cases on procurement in the European courts, but since the implementation of the new rules every year seems to bring more cases than the last.

Both estimated lines that try to best describe the data and the observed amount of cases are shown in the graph below. The red line is the full regression that allows the four patterns I searched for, the green line is the estimation with the two significant regressors, the blue squares are the observed number of cases.



Full regression

SUMMARY OUTPUT,				
R-square	0,686077			
Adjusted R-square	0,651196			
Std. Error	2,620699			
Observations	31			
	coefficients	*Standard error*	*T- test value*	*P-value*
Intercept	2,619565	1,104232594	2,372294778	0,025062581
Time trend	0,070435	0,077280183	0,911421009	0,370139618
Dummy 2005	-2,31	2,445762426	-0,944490755	0,353294822
New trend	2,072422	0,501258526	4,134438124	0,000309841

Significant regressors

SUMMARY OUTPUT,				
R-square	0,671379626			
Adjusted R-square	0,660047889			
Std. Error	2,587231479			
Observations	31			
	coefficients	*Standard error*	*T- test value*	*P-value*
Intercept	3,417322835	0,513356	6,656832	2,67E-07
New trend	1,859392576	0,241566	7,697254	1,73E-08