

NO LONGER THE BEST:

The Effects of Restrictive Tendering

ON THE REGION OF WATERLOO



MARCH 2018

BRIAN DIJKEMA



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Shot of Uptown Waterloo as seen from the 6th level of the Uptown Parkade.

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By Andrew Recnik

View from the parkade in Uptown Waterloo

Cardus Construction Competitiveness Monitor: Research Brief

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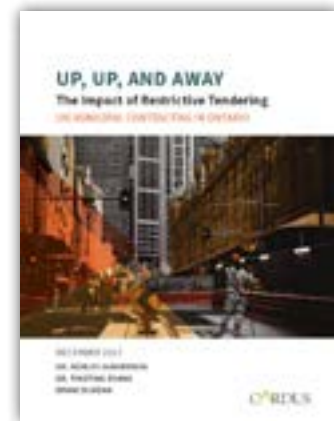
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INTRODUCTION: EVIDENCE-BASED POLICY-MAKING

Last year, Cardus partnered with economists Morley Gunderson and Tingting Zhang to produce a report titled “Up, Up, and Away: The Impact of Restrictive Tendering on Municipal Contracting in Ontario.” Our paper compared the difference in bidding prices on construction projects in municipalities affected by an obscure piece of Ontario labour law that inadvertently gives a small number of contractors a virtual monopoly on public infrastructure projects, with those that operate according to the legally mandated fair, competitive, and transparent bidding guidelines.



The findings of that paper suggested that municipalities under restrictive bidding regimes experienced increases of roughly 100 percent in the gaps between the winning bid and a variety of other measured bids (next highest, mean, and high). We noted that municipalities operating under the constraints of these restrictions were likely experiencing significant upward pressure on construction prices.

We noted the strength of our results, and that they suggest that restricting tendering has negative effects on the policy goals of municipal bidding, but we also acknowledged the limitations of our methodology and our data.

“Up, Up, and Away” used a variety of null hypothesis significance testing (NHST), which, in a nutshell, is a statistical method “used to decide between two inverse claims: either ‘an effect’ that posits a relationship between, say, a treatment and an outcome (typically the favoured hypothesis) or ‘no effect’ (defined as the null hypothesis).”¹

In this paper, we follow the advice of statisticians Blakely B. McShane, David Gal, Andrew Gelman, Christian Robert, and Jennifer Tackett, who call for the use of *P* values (which we used in “Up, Up, and Away”) to be “considered as just one among many pieces of evidence”² assisting policy-makers in their decisions. Their advice is primarily aimed at academic journals, but applies just as much to policy-makers when making policy decisions based on empirical work. These scholars suggest that a set of accompanying considerations that should act as types of evidentiary counsellors to those making decisions, including “prior knowledge . . . real world costs and benefits, and other factors.”³

Cardus has examined various factors related to restrictive tendering from a variety of angles in the set of papers that form the Cardus Construction Competitiveness Monitor. The rationale behind *this* paper stems from our intent to provide further observations, using data that will show the effects of closed tendering on a specific *local* market.

1 Jeff Leek et al., “Five Ways to Fix Statistics,” *Nature*, November 28, 2017, <https://www.nature.com/articles/d41586-017-07522-z>.

2 Blakely B. McShane et al., “Abandon Statistical Significance,” *ArXiv* (September 21, 2017): <https://arxiv.org/pdf/1709.07588.pdf>.

3 Ibid.



Restrictive tendering is the result of provincial law made in Toronto for the whole province, **but it is local communities, citizens, workers, and companies living and working there that are affected.**

While the issue of restrictive tendering is the result of provincial law made in Toronto for the whole province, it is local communities, and the citizens, workers, and companies living and working there, that are affected. This paper focuses on data from one particular municipality, the Region of Waterloo, which, because of its relatively recent certification as a construction employer, did not have data that fit within the time frame studied by our previous papers.

DATA

Our study examines bid data on ICI construction projects in the Region of Waterloo between the period of 2009 and 2017.

The data are drawn from a variety of sources, including public bidding websites such as biddingo.com (a procurement portal used by most, if not all, municipalities in Ontario), the records of contractors who agreed to share historical bidding data and from the public records of the Region of Waterloo. The vast majority of the observations are from the Region of Waterloo's municipal procurement office, and all data (including those from contractors) are part of the public record. The data contain a total of fifty-five projects tendered by the Region. Of these, thirty are from the period before the Region was certified, and twenty-two are from the period after its certification.

FAST FACTS: Region of Waterloo and Restrictive Tendering

The Region of Waterloo is an upper-tier municipality consisting of the cities of Kitchener, Waterloo, and Cambridge, and the townships of Wellesley, Woolwich, Wilmot, and North Dumfries. It is a sizeable Region, with 535,154 citizens, and is the tenth-fastest-growing census metropolitan area in Canada.

The Association of Municipalities of Ontario notes that upper-tier municipalities manage overarching infrastructure needs in a Region that transcends lower tiers. As such, the Region of Waterloo manages procurement for major infrastructure projects and “services such as: arterial roads; transit; policing; sewer and water systems; waste disposal; Region-wide land use planning and development; as well as health and social services.”¹

The Region of Waterloo was certified as a “construction employer” for the Industrial, Commercial, and Institutional (ICI) sector and became signatory to the provincial collective agreement on July 4, 2014, when the Ontario Labour relations board “concluded that two employees in the bargaining unit were engaged in work within the construction industry and within the bargaining unit on the date of the application and that the responding party is not a non-construction employer within the meaning of the Ontario Labour Relations Act.”² The “work within the construction industry” in this case was a garden shed on Regional grounds.

1 Association of Municipal Ontario, “Ontario Municipalities,” <https://www.amo.on.ca/AMO-Content/Municipal-101/Ontario-Municipalities.aspx>.

2 *Carpenters’ United Brotherhood of Carpenters and Joiners of America v Waterloo (Regional Municipality)*, 2014 CanLII 38344 (ON LRB), <https://www.canlii.org/en/on/onlrb/doc/2014/2014canlii38344/2014canlii38344.html>.

OBSERVATIONS:

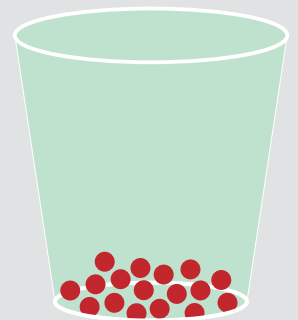
PROFILE OF CONTRACTORS AND PERCENTAGE OF UNIONIZED CONTRACTORS IN REGION OF WATERLOO

From 2009 to 2017 there were a total of 103 unique contractors who bid on work in the Region. Cardus analyzed the union certification status of these contractors through searches conducted on the Canadian Legal Information Institute's database (<https://www.canlii.org/en/>), referencing membership directories of unionized contractors and their associations (<http://unionized-constructionworks.com/directory/>), and the Ontario Labour Relations Board Collective Agreement Library. There were a very small number of joint-venture bids (i.e., when multiple companies combine their efforts to bid as a unique entity), and we counted these joint ventures as a unique company. It is important as well to note that the nature of labour relations is fluid, and the potential for changes in our observations is present. Ontario labour relations law provides workers with the ability to unionize if they can show sufficient support at any time, and unionized firms may see changes in their union status if workers choose to either leave a union during so called open periods (decertifying), or to change their union during the same open periods. That said, while these directories and lists are not comprehensive, they do provide the best public information on which firms are unionized and which are not. Our research suggests that seventeen of the contractors that bid on the Region's projects operate under the provincial ICI agreement of the Carpenters' Union, or 16.5 percent of all bidders.

For the vast majority of our observations, we had complete data. That is, we had the company name of all bidders, and the bid price for all bidders. There were, however, six projects in the competitive environment where we were missing data. For those six observations, we had company names, bid prices for the lowest four bids, and then the highest bid, as well as knowledge of the total number of bids. The total number of missing bidders was sixteen. Assuming that each of these missing bidders was a unique bidder that did not bid on the projects for which we had complete information, the numbers change, but only slightly. If we were to assume that every one of the bidders for which we have no information was affiliated with the Carpenters' Union, there would be a total of thirty-three unionized firms, or 28 percent of all bidders. However, given the ratio of affiliated firms to non-affiliated firms in the bulk of our observations for which we have complete information, this number is likely less reliable. In any case, the percentage of all bidders is found in a range between 16.5 percent and 28 percent, with the likely actual number being on the lower end of that range.



From 2009 to 2017 there were a total of 103 unique contractors who bid on work in the Region.



Only seventeen of those contractors are signatory to the provincial ICI agreement of the Carpenters' Union.

A Quick Guide To The Tendering Process

Municipalities do not typically build their own infrastructure. Because things like water treatment plants, airports, and so on require highly specialized engineering and construction knowledge—knowledge that would be too costly for the city to develop and maintain on its own—municipalities typically purchase these services from the private sector. In order to ensure that the municipality is getting best value for taxpayers' dollars, municipalities “tender” the project. To do so they put out a description of the project (i.e., a water treatment plan) and “invite” companies to bid on the project. Sometimes they will specify criteria (such as safety records, or past experience) that will enable only certain firms to “pre-qualify” to bid. Projects are sometimes awarded on cost only, and sometimes on a combination of pre-determined criteria. **In most cases, however, the project is awarded to the bidder who meets the specified criteria at the lowest cost.** Thus, like in golf, the company with the “lowest bid” is typically the “winning bid” and those that are “high bid” do not win. For a more detailed analysis of the tendering process by a leading procurement expert, please see “**Hiding in Plain Sight: Evaluating Closed Tendering in Construction Markets.**”¹

CHARACTERISTICS OF BIDDING ENVIRONMENT PRIOR TO AND FOLLOWING CERTIFICATION

Using this list, Cardus analyzed the bids related to the thirty projects tendered from 2009 to 2014 under a competitive regime, and the twenty-two projects tendered between 2014 and 2017, when the Region tendered under the restricted regime. Projects that were tendered prior to July 4, 2014, are considered open (even if the tenders closed after this time), while those opened for tender after this time are considered closed. Below are some observations and characteristics of the two regimes drawn from the data set available to us.

Open	Closed
30	22

PROJECTS WON BY CARPENTERS' AFFILIATED FIRMS IN OPEN ENVIRONMENT

In the competitive environment, according to the data available to us, there **was only a single project that was won by a firm affiliated with the Carpenters' Union.** That project—the replacement of a landfill weigh scale in 2010—was awarded to G.S. Wark, who was the sole bidder.

BEST PLACING OF CARPENTERS' FIRM IN OPEN ENVIRONMENT UNDER COMPETITIVE CONDITIONS

Apart from that single winning bid, and again noting the possibility that we are missing data, **the lowest placing of a Carpenters' affiliated firm in that time was, to the best of our knowledge, third place.**

AVERAGE PLACEMENT OF CARPENTERS' AFFILIATED FIRMS

The average placement of Carpenter's affiliated firms was fifth. However, because we had incomplete data on a small number of projects, this number might actually be a bit higher. (That is, there is a possibility that the average placement might be sixth or higher.)



¹ Stephen Bauld and Brian Dijkema with James Ton, “Hiding in Plain Sight: Evaluating Closed Tendering in Construction Markets,” Cardus, 2014, <https://www.cardus.ca/store/4290/>.

As noted above there were six projects in the competitive environment where we were missing data. For those six observations, we had company names, and bid prices for the lowest four bids, and then the highest bid, as well as knowledge of the total number of bids.

Company A—100,000,000 Place 1/9

Company B—100,000,000 Place 2/9

In such cases if Carpenters’ Union–affiliated firms were not present in the lowest four bids, we assumed that the Carpenters’ firm was fifth and we assumed that the bid price was the price of the fourth-place bid + \$1.00. Likewise for subsequent bids. It’s possible that in such a case, there were no Carpenters’ firms, or that their firms bid higher, but for the purposes of fairness we assumed a “most competitive case scenario.”

SIGNIFICANT NUMBERS OF PROJECTS HAD ZERO BIDS FROM CARPENTERS’-AFFILIATED FIRMS

Out of thirty projects in that time period, eleven had zero Carpentry bids. That is, **on 37 percent of projects, Carpenters’-affiliated firms did not bid at all.** As with above, if we were missing information, we assumed the most competitive scenario and considered all projects for which we were missing information to include a Carpenters’ bid.

AVERAGE NUMBER OF BIDDERS IN OPEN ENVIRONMENT VERSUS CLOSED ENVIRONMENT

There were an average of 8.14 bids per project among the 30 projects in the “pre-certification” period. The lowest number of bids received on a project was 3, and the highest number of bidders was 19.

There were an average of 3.68 bids per project among the 22 projects in the post-certification period. That is, **the Region was receiving, on average, less than 50 percent of the number of bids in the post-certification period.**

Bids Per Project:

Open	Closed
8.14	3.68

NOTABLE CHARACTERISTICS OF BIDS IN CLOSED ENVIRONMENT

Four projects of the 22, or 18 percent, of projects in the post-certification period received only 1 bid, and another 4 projects had only 2 bids. The highest number of bidders in the post-certification period was 8.

BID GAP ANALYSIS

We also performed an analysis of the “bid gaps” in the Region of Waterloo using the same methodology as in “Up, Up, and Away.”⁴

Overall mean = -.05252

Before/open: $(Y_w - Y_n) / Y_n = -0.02979$

After/restricted: $(Y_w - Y_n) / Y_n = -0.07496$

Difference between open/restricted (before-after) = 0.04517

⁴ See Brian Dijkema, Morley Gunderson, and Tingting Zhang, “Up, Up, and Away: The Impact of Restrictive Tendering in Municipal Contracting in Ontario,” Cardus, December 2017, 11–14.

While we don't have direct comparisons with neighbouring jurisdictions, there is nonetheless a very apparent increase in the bid gaps of 151 percent, again suggesting strong upward pressure on prices in a relatively short time. **The Region used to be among the best and most competitive construction markets in Ontario, but no longer. While the gaps are still below the provincial mean noted in "Up, Up, and Away" (albeit within a different time frame), it appears that restrictions are pushing the gaps between bids from best to average.** As with "Up, Up, and Away" projects that have 1 bid (and thus no gap) are not included.

Additionally we performed an analysis of the "pre-certification period" on bid spreads similar to that which was done in the aggregate data as a whole. In the open period, we analyzed the results to answer the question, What would be the spread between the winning bid and the next bid if only Carpenters' firms counted, and how would that compare to the spread between bids the winning and the next lowest firm?

On the 19 projects where Carpenters' firms bid, the gap was -.09576 versus -.02979, or a difference of -.06597, or 221 percent.

NUMBER OF FIRMS BIDDING IN OPEN ENVIRONMENT VERSUS CLOSED ENVIRONMENT

The number of unique firms that bid in the pre-certification period, including Carpenters', is 91. The number in the post-certification period is 15. Put differently, the Region is accepting bids from only 16.5 percent of its previous bidders. Put differently again, **the Region's pool is 83.5 percent smaller, or more concentrated, in a before/after comparison.**

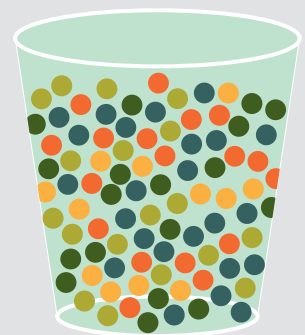
This is, of course, a snapshot in time, and it is very likely that more Carpenters' firms that previously did not bid in the Region of Waterloo due to competitive pressures will now start to bid (we can see this in the data), but the point is that, in one fell swoop, the pool was almost drained of competition.

NUMBER OF WINNING FIRMS IN OPEN ENVIRONMENT VERSUS CLOSED ENVIRONMENT

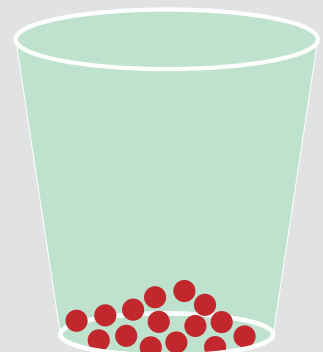
The Region also experienced a concentration among those who won projects. Whereas a comparison of winners to number of bidders in the open period revealed a ratio of fourteen winners in thirty projects (47 percent), in the restricted period, there were nine winners for twenty-two projects (41 percent).

There is nonetheless a very apparent increase in the bid gaps of 151 percent, **again suggesting strong upward pressure on prices in a relatively short time.**

Number of Unique Firms in Bidding Pool:



Open: 91



Closed: 15

ANALYSIS AND COMMENTARY

The sample size in this study is not huge, and the timelines are fairly short, but the data do provide a picture of the immediate effect of restrictive tendering on one local market. And virtually all points in the data suggest that those immediate effects are out of line with the ideal environment for local workers, local contractors, and, most importantly, the Region and its community of citizens.

There is little doubt that the reduction of the number of bidders can be attributed to anything other than the restrictions imposed upon the Region by its certification by the Ontario Labour Relations Board in 2014. The significant reduction in the number of bidders and the concentration of reduction of the winners of said projects is important for a number of reasons. The first, as noted in previous papers, studies have shown that prices increase when the number of bidders declines. In particular we noted studies from Montreal that, due to an analogous restrictions on bidders, showed the city was overpaying up to 30 percent for its construction contracts, as well as studies from the University of Texas, which noted that projects receiving eight bids resulted in prices up to 25 percent lower than projects receiving only two.⁵ The Region's bidding pool experienced almost identical reductions in number of bidders, going from an average of 8.14 bidders in the open environment to 3.68 in the closed environment. Moreover, the significant number of projects with only one or two bidders closely mirrors a worst-case scenario for procurement officials looking to ensure that the public receives best value for money on construction projects.

Further, it's difficult to imagine another cause for the Region's quick movement from being a highly competitive environment with gaps between winning bids and next-highest bid of about 3 percent to one with a gap of 7.5 percent.

What has effectively occurred in the Region of Waterloo is a movement from a highly competitive environment with very narrow gaps between the winning bid and the second-place bid to a place where not only those gaps are wider, but they are being filled by firms that did not win in the competitive environment. Firms that used to be middling performers in the competitive environment now have exclusive rights over all of the Region's work.

What is important to note again, because it so often fails to get noticed in this debate, is that restrictions do not just give a few select workers exclusive jurisdiction at the cost of other workers, though this is true, but it provides a select group of *firms* with exclusive rights. Closed tendering creates a coercive oligopoly that disproportionately benefits a small group of firms who, because they experience reduced competition on price, are able to increase profits at the cost of taxpayers. Oligopolies of the sort created by closed tendering *disproportionately benefit the owners of a small number of firms at the cost of other firms, their workers, and the public at large.*

Firms that used to be middling performers in the competitive environment now have exclusive rights over all of the Region's work.

Oligopolies of the sort created by closed tendering disproportionately benefit the owners of a small number of firms at the cost of other firms, their workers, and the public at large.

⁵ Bauld and Dijkema, with Tonn, "Hiding in Plain Sight"; Dijkema, Gunderson, and Zhang, "Up, Up, and Away."

CONCLUSION

Critics of Cardus's work on this file might respond that all of our evidence is circumstantial. They might point to “Up, Up, and Away” and note that statistical analysis that uses *P* values is unreliable as a guide to policy-making. Or they might note the universal consensus among economists, and international economic research organizations like OECD, as well as every municipal and provincial procurement directive, that competitive bidding is the best method of ensuring that citizens receive best value for their tax dollars and dismiss it as abstraction that ignores realities on the ground. They might then look at this paper, and at the real-world experience of procurement officers in jurisdictions faced with these restrictions who are faced with fewer bids, and increased administrative burden to manage public projects, and dismiss them as local issues that can't be applied further. Or they might consider that closed tendering bars someone from working on a public project, for which they as citizens have paid, simply because they exercised their right to join an unfavoured private institution and say “choose a different union.” They might look at the history of Montreal and Toronto and say that the corruption that occurred in those places because of closed tendering in those jurisdictions was simply a case of a few bad apples. Or they might look to the inability of the Toronto Community Housing Corporation to manage its capital backlog and blame the city for bad management. Or they might look at the obscene costs associated with minor repairs at the Toronto District School Board, and note that, well, yes, there are a few issues, but those too are the case of bad management or a few workers padding the stats.

Or, they might propose that closed tendering accomplishes some policy end, like safety or better-quality buildings, while ignoring that not only does the open procurement system already have means to attain these goals, but also, even if it didn't, closing off tendering to firms based on one factor—the workers' choice to associate with one particular private organization over another—is not the best method of achieving those goals, and might make it worse.

At some point the body of evidence builds to the point where it becomes incontrovertible. And when we reach such a point one wonders why we must still make the case for what everyone already knows but won't admit either because they benefit from it, or because they lack the fortitude to speak the truth: there is no compelling public-interest case for closed tendering.



There is no compelling public-interest case **for closed tendering.**

BUILDING COMPETITIVE AND LIVABLE COMMUNITIES requires effective procurement policies for construction. Cardus's Work and Economics research program includes developing an understanding of how a competitive labour pool model can improve on some of the bidding policies employed by buyers of construction, including municipalities. As municipalities face increased infrastructure construction, maintenance, and repair costs, they will be forced to find innovative ways to ensure that their projects are completed in a cost-effective and sustainable way.



cardus.ca/research/workandeconomics

