



State of the Evidence: Open Contracting

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Introduction

According to recent estimates from the Open Contracting Partnership and Spend Network, governments globally spend USD 13 trillion a year on public contracts for goods, services, and works.¹ The OECD estimates that on average, public procurement constitutes around 12%–20% of a country's GDP.² Yet even though it is one of a government's activities most vulnerable to waste, fraud, and corruption,³ less than 3% of procurement spending is published openly.⁴

This paper reviews the available empirical evidence on the effects of open contracting on a range of outcomes, including cost savings and efficiency, reducing corruption, improving service delivery, and increasing social inclusion.

Defining Open Contracting

There is no single, common definition of open contracting. According to the Open Contracting Partnership, “Open contracting is about publishing and using open, accessible and timely information on public contracting to engage citizens and businesses to fix problems and deliver results.”⁵ It concerns the publication of data related to public tenders or contracts across five stages (planning, initiation, award, contract, and implementation), with data published openly according to agreed-upon standards, as well as wider reform processes such as participation in, and monitoring of, public contracting.⁶

The definition adopted for this review is similarly broad. It encompasses reforms and interventions which aim to increase transparency and inclusivity of procurement processes as well as those which employ data to monitor and oversee procurement processes. The terms “transparent” and “open” as well as “procurement” and “contracting” are used largely interchangeably in this review, reflecting the gradual shift in usage from the terms “transparent procurement” to “open contracting” over the past 10 years.

RESEARCH QUESTIONS

This review aims to answer the following questions through concrete empirical evidence:

- a) Has open contracting helped a country **increase efficiency and provide value for money**?
- b) Has open contracting helped **prevent corruption or manage corruption risks**?
- c) Has open contracting helped **increase competition and inclusion** in public procurement?
- d) Has open contracting helped in the **provision of services**?
- e) Has open contracting helped in fostering other open government reforms focused on fiscal transparency such as **beneficial ownership transparency**?

¹ OCP and Spend Network, *How governments spend: Opening up the value of global public procurement* (2020), <https://www.open-contracting.org/wp-content/uploads/2020/08/OCP2020-Global-Public-Procurement-Spend.pdf>.

² OECD, *Methodology for Assessing Procurement Systems (MAPS)* (Jul. 2016), <https://www.oecd.org/gov/public-procurement/Methodology-Assessment-Procurement-System-Revised-Draft-July-2016.pdf>.

³ OECD, “Promoting transparency and strategic use of public procurement” (Apr. 2019), <https://www.oecd.org/corruption-integrity/checklists/promoting-efficient-transparent-sub-national-procurement-aci.html>.

⁴ OCP and Spend Network, *How governments spend: Opening up the value of global public procurement*.

⁵ OCP, “Transforming public contracting through open data & smarter engagement” (accessed Mar. 2022), <https://www.open-contracting.org/what-is-open-contracting/>.

⁶ Francois van Schalkwyk and Miko Cañares, *Open Contracting and Inclusion* (Hivos, 2020), <https://hivos.org/document/open-contracting-and-inclusion/>.

The review also briefly discusses the documented trade-offs between the costs and benefits of open contracting, as well as any unintended consequences of open contracting reforms.

Methodology

This review adopts a similar approach to Fazekas and Blum (2021) regarding criteria for selecting studies.⁷ Priority is given to experimental and quasi-experimental studies (which purposefully track the effects of an intervention on a subject group and control group, sometimes accounting for multiple variables) and empirical studies (which compare the real-world effects of an intervention with the situation before the intervention was introduced). It also includes a number of regression studies that analyze correlations between open contracting or open data reforms and other indicators. Given the limited research that has been carried out to date using these methods, this body of research is complemented with observational findings and qualitative case studies, where relevant.

The review focuses on studies from the past ten years. However, it also includes a small number of seminal papers which pre-date this time period and are considered to offer important empirical insights on the impacts of open contracting interventions, such as De Silva et al. (2008), Di Tella and Schargrodsky (2003), Marion (2007), Ohashi (2009), Olken (2007), Singer et al. (2009). A full list of the papers included in this review, along with the research methods used and principal findings, is included in Annex 1.

SEARCH STRATEGY

Given its relevance and recency, Fazekas and Blum (2021) was taken as a starting point for the search for empirical evidence. A snowballing approach was then adopted to identify further studies from the footnotes and bibliography of this and subsequent studies. In addition, the search drew on the Open Contracting Partnership's academic research tracker, evidence page,⁸ and impact stories,⁹ and a thorough review of the websites of other key organizations working on the topic (the Center for Global Development, the Government Transparency Institute, Digiwhist, Hivos, Open Ownership etc.). Once these channels had been exhausted, an online search using Google and Google Scholar was conducted (up to 10 pages deep), interchanging key terms ranging from the general to the specific, such as "contracting," "procurement," "open," "transparency," "impacts," "benefits," "corruption," "services," "health," "education," "inclusion," "marginalized," "gender," "women," "beneficial ownership," etc. Due to time and resource constraints, only searches in the English language were conducted.

⁷ The most comprehensive review in this area to date (Fazekas and Blum 2021) analyses two key outcomes of public procurement reforms: improving value for money and promoting fair and open access to public contracts. The study emphasizes high-quality quantitative research papers using randomized controlled trials, natural experiments, and other methods reliably establishing a causal link between the intervention and the outcomes. It also considers observational studies—studies relying on observing behavior without intervention or manipulation—even though they are less reliable in identifying causal effects. Finally, it examined some qualitative studies and case study methods while recognizing that their findings are often not representative. Mihály Fazekas and Jürgen René Blum, *Improving Public Procurement Outcomes Review of Tools and the State of the Evidence Base* (Pol'y Res. Working Paper 9690) (World Bank Group, Jun. 2021), <https://documents1.worldbank.org/curated/en/656521623167062285/pdf/Improving-Public-Procurement-Outcomes-Review-of-Tools-and-the-State-of-the-Evidence-Base.pdf>.

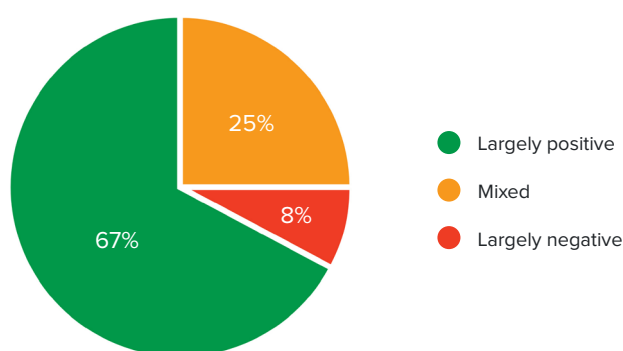
⁸ See <https://www.open-contracting.org/impact/evidence/>.

⁹ See <https://www.open-contracting.org/impact-stories/>.

State of the evidence

This paper used diverse methods to identify more than 60 research materials that provide evidence on the benefits (or otherwise) of open contracting, broadly defined. A review of these materials finds that the evidence on the impacts of open contracting is largely positive, in particular regarding efficiency, value for money, and competition. There is more limited evidence that open contracting leads to beneficial social outcomes such as increased access to quality public services, decreased corruption, or greater equality, inclusion, and gender-equity. In sum, the balance of evidence clearly shows that open contracting is an impactful area of reform.

Is the evidence on the benefits of open contracting largely positive, negative or mixed?



It is worth noting that, with some exceptions, the identified studies tend to attribute outcomes to the introduction of e-procurement reforms or transparency platforms generally, although some studies focus on more targeted reforms such as e-auctions, or bidder qualification criteria. Furthermore, many studies do not provide evidence on the magnitude of the effects of open contracting interventions. This is either because there is insufficient good quality data to compare outcomes before and after interventions or because the assessed interventions are often part of larger reforms¹⁰ and hence it is difficult to isolate their effects. Furthermore, the context specificity of studied cases provides limited external validity for other contexts and there is little analysis of the necessary or sufficient conditions that enable impact.¹¹

In terms of the geographical scope of the evidence, two regions stand out: Europe (in particular Eastern Europe) and Latin America, although there is also some representation from other parts of the world including, most notably, Indonesia, the Philippines, and Kenya. In part, this may be explained by the widespread introduction of e-procurement reforms in these regions in the early 2000s. By 2020, over two-thirds of countries in Latin America and the Caribbean and 100% of OECD countries had implemented e-procurement systems, often via a central platform.¹²

¹⁰ Fazekas and Blum, *Improving Public Procurement Outcomes Review of Tools and the State of the Evidence Base*; Dr. Jan Telgen, Jonna van der Krift, and Dr. Astrid Wake, *Public procurement reform: Assessing interventions aimed at improving transparency* (London: DFID, 2016), <https://gsdrc.org/wp-content/uploads/2017/05/Public-Procurement-Reform.pdf>.

¹¹ Michael C. Jelenic, "From theory to practice: Open government data, accountability and service delivery" in Danny Lämmerhirt et al. (eds) *Situating Open Data Global Trends in Local Contexts* (African Minds, 2020), https://www.scienceopen.com/document_file/d6334a86-67b9-4f19-b9e0-434fb3a71606/ScienceOpen/Ch10%20Situating%20Open%20Data.pdf.

¹² OECD, *Government at a Glance: Latin America and the Caribbean 2020* (2020), https://www.oecd-ilibrary.org/governance/government-at-a-glance-latin-america-and-the-caribbean-2020_13130fbb-en.

Impact of open contracting on cost savings and efficiency

There is limited evidence on the macro-level contribution of e-procurement to economic growth. However, the economic impacts of open contracting and e-procurement at the micro level are better understood, and generally point to the potential for important savings in terms of costs and efficiency. While this evidence is compelling, it is not conclusive.

Based on a counterfactual analysis of introducing a large-scale e-procurement platform in the government administration of Singapore in 1998, a 2016 World Bank paper finds large and pervasive growth gains from the new system. It also found a substantially lower counterfactual growth trajectory in the absence of e-procurement. The estimated growth effects of e-procurement increase over time and are found to be robust across multiple specifications.¹³ A 2020 paper from the University of Western Australia, meanwhile, highlights a mixed impact of mandatory e-procurement on growth, with the magnitude of the growth effect dependent on the quality of governance and policy implementation. The paper contrasts the significant positive impact of mandatory e-procurement on the economic growth of Western Australia with a zero impact of similar reforms in New South Wales. It attributes the contrast to differences in transaction costs, quality of governance, and strength of regulatory oversight. The estimated impact of reform is robust across numerous placebo studies, and control groups and does not seem to be driven by pre-existing shocks or prevalent economic conditions.¹⁴

Multiple micro-level studies estimate significant cost savings from the introduction of e-procurement platforms, using a range of methods.

A 2019 regression analysis on the impact of the introduction of the ProZorro procurement system in Ukraine found evidence of an increased gap between estimated and actual prices (3.5 to 5.8% lower than a pre-ProZorro procurement).¹⁵ In its pilot phase in 2015, ProZorro was estimated to have saved over USD 55 million for more than 3,900 government agencies and state-owned enterprises across Ukraine. By November 2016, savings stood at an estimated USD 233 million.¹⁶ Using a difference-in-differences strategy, a 2020 study in Argentina estimated a 4% decrease in prices paid by the state and more than USD 35 million in savings based only on lower prices (i.e., not including gains from other factors such as fewer delays) following the adoption of the e-procurement platform COMPR.AR in Argentina.¹⁷ Research by the Open Contracting Partnership in Paraguay estimated an increase in savings on procurement costs of 1.4% a year after the launch of the country's open contracting portal and redesign of its procurement portal in 2015. It also documented a drop

¹³ Anna Kochanova, Zahid Hasnain, and Bradley Larson, *Does E-Government Improve Government Capacity? Evidence from Tax Administration and Public Procurement* (Pol'y Res. Working Paper 7657) (World Bank Group, Apr. 2016), <https://documents1.worldbank.org/curated/en/334481468193734893/pdf/WPS7657.pdf>.

¹⁴ Thomas Emery, Rok Spruk, and Lela Mélon, *Does E-Procurement Matter for Economic Growth? Subnational Evidence from Australia* (Univ. of WA, 2020), <https://research-repository.uwa.edu.au/en/publications/does-e-procurement-matter-for-economic-growth-subnational-evidenc>.

¹⁵ Artur Kovalchuk, Charles Kenny, and Mallika Snyder, *Examining the Impact of E-Procurement in Ukraine* (Working Paper 511) (Cntr. for Global Development, 2021), <https://www.cgdev.org/sites/default/files/examining-impact-e-procurement-ukraine.pdf>.

¹⁶ Sophie Brown, "Everyone sees everything: Overhauling Ukraine's corrupt contracting sector" (OCP, 26 Nov. 2016), <https://medium.com/open-contracting-stories/everyone-sees-everything-fa6df0d00335>.

¹⁷ Roberto de Michele and Gastón Pierri, "Transparency and Digital Government. The Impact of COMPR.AR in Argentina" (Discussion Paper IDB-DP-767) (Inter-American Development Bank, May 2020), <https://publications.iadb.org/publications/english/document/Transparency-and-Digital-Government-The-Impact-of-COMPR.AR-in-Argentina.pdf>.

in adjustments and amendments to contracting processes from 19% of all contracts in 2013 to 3% in 2016.¹⁸ A 2016 OECD report on the impact of South Korea's ON-Line E-Procurement System (KONEPS) estimated savings of USD 8 billion per year based on savings in administrative costs, mainly through a reduced burden on businesses.¹⁹ A 2009 study from Chile estimated price reductions through e-procurement (thanks to centralized administration and a larger number of bidders) of 2.65% and administrative cost savings of 0.28%–0.38%²⁰ between 2006 and 2007.²¹

Other studies have identified cost savings from more specific or targeted open contracting reforms such as publishing cost estimates, improving the transparency of bidder qualification processes, or introducing electronic auctions.

A differences-in-differences analysis of highway construction projects in Oklahoma, USA, found that the state's publication of internal cost estimates prior to the submission of bids led to lower average bids and a lower winning bid. This was duplicated with stronger impacts in more complex and uncertain projects. The policy also allowed new entrants to put in more realistic bids and increased their survival rate in the industry.²² A study of improved transparency in the bidder qualification process in municipal public works auctions in Japan, also using a difference-in-differences design, found that improved transparency reduced procurement costs by up to 8%.²³ A correlational study looking at public works and IT purchases in the Slovak Republic (2007–2009) estimated the use of electronic auctions to lead to 2.4% lower price than the originally estimated contract value, as compared to standard open auctions.²⁴ Another correlational study from Russia found that electronic-auction use led to an additional increase in discounts on sugar purchases of around 28%, corresponding to approximately a 6% lower price per kilogram compared to the regional average price of sugar.²⁵

There is also evidence that open contracting increases efficiency, usually measured in terms of time savings.

In South Korea, the introduction of KONEPS reduced the time taken to process contracts by the government from over 30 hours to two.²⁶ In Colombia, within one year of implementing the country's new e-procurement system, the number of days it took to award contracts improved by 16 days on average.²⁷ In Ukraine, the introduction of the ProZorro procurement system reduced the time to procure goods and services by around 5

¹⁸ Sophie Brown and Georg Neumann, "Paraguay's transparency alchemists: How citizens are using open contracting to improve public spending" (OCP, 2 Oct. 2017), <https://medium.com/open-contracting-stories/paraguays-transparency-alchemists-623c8e3c538f>.

¹⁹ OECD, *The Korean Public Procurement Service: Innovating for Effectiveness* (OECD Public Governance Reviews) (2016), www.keepeek.com/Digital-Asset-Management/oecd/governance/the-korean-public-procurement-service_9789264249431-en#page4.

²⁰ The large size of national procurement markets means that small proportions can translate into significant absolute sums.

²¹ Marcos Singer et al., "Does e-procurement save the state money?" *J. of Public Procurement* 9, no. 1 (2009): 58–78, <https://www.emerald.com/insight/content/doi/10.1108/JOPP-09-01-2009-B002/full/html>.

²² Dakshina De Silva et al., "The impact of public information on bidding in highway procurement auctions" *European Econ. Review* 52, no. 1 (2008), <https://ideas.repec.org/a/eee/eecrev/v52y2008i1p150-181.html>.

²³ Hiroshi Ohashi, "Effects of Transparency in Procurement Practices on Government Expenditure: A Case Study of Municipal Public Works" *Rev. of Ind'l Org'n* 34 (2009): 267–285, <https://link.springer.com/article/10.1007/s11151-009-9208-1>.

²⁴ Jan Pavel and Emilia Sičáková-Beblová, "Do E-Auctions Really Improve the Efficiency of Public Procurement? The Case of The Slovak Municipalities" *Prague Econ. Papers* 1 (2013), <https://pep.vse.cz/pdfs/pep/2013/01/06.pdf>.

²⁵ Andrei Yakovlev, Alexandra Bashina, and Olga Demidova (2014). "The effectiveness of simple homogeneous commodity procurement under rigid governmental regulation: the case of granulated sugar procurement in Russia" (Working Paper BRP 13/PA/2014; HSE Working Papers) (Nat'l Res. Univ. - Higher Sch. of Econ., 2014), <https://doi.org/DOI>.

²⁶ OECD, *The Korean Public Procurement Service: Innovating for Effectiveness*.

²⁷ Colombia Compra Eficiente, *Resultados del sistema de indicadores* [Results of the Indicator System] (2015), <https://colombiacompra.gov.co/indicadores/resultados-del-sistema-de-indicadores>.

to 6 days.²⁸ In Argentina, the adoption of COMPR.AR reduced the duration of the public procurement process by over 11 days.²⁹ A 2018 experimental study of the impact of disclosing information on public investment projects on the online platform, MapalInversiones, in Costa Rica found that financial progress of public investment projects uploaded onto the platform increased by 18 percentage points, and physical progress increased by 8 percentage points compared to unpublished projects three months after the launch of the platform. The effect was found to be stronger in the short term and for smaller projects.³⁰

Other evidence points to more mixed results on the economic impacts of open contracting.

A 2014 quasi-experimental impact evaluation of infrastructure e-procurement in India and Indonesia found no statistically significant changes in prices paid by the government in response to electronic procurement. It did, however, observe improvements in the quality of roads in India and reduced delays in completion of public works projects in Indonesia.³¹ A 2012 systematic review of the evidence measuring the impact of transparency on infrastructure outcomes globally found that 45% of the statistically significant observations indicated the interventions caused a decrease in costs (as opposed to 4% which indicated increased costs) and 41% indicated an increase in efficiency (as opposed to 13% which indicated a reduction in efficiency).³²

²⁸ Kovalchuk, Kenny, and Snyder, *Examining the Impact of E-Procurement in Ukraine*.

²⁹ de Michele and Pierri, “Transparency and Digital Government. The Impact of COMPR.AR in Argentina.”

³⁰ Martín A. Rossi, Antonia Vazquez, and Juan Cruz Vieyra, “Information Disclosure and the Performance of Public Investment The Case of Costa Rica” (Discussion Paper IDB-DP-795) (Inter-American Development Bank, Aug. 2020), <https://publications.iadb.org/publications/english/document/Information-Disclosure-and-the-Performance-of-Public-Investment-The-Case-of-Costa-Rica.pdf>.

³¹ Sean Lewis-Faupel et al., “Can Electronic Procurement Improve Infrastructure Provision? Evidence From Public Works in India and Indonesia” (No. 20344; NBER Working Paper Series) (Nat’l Bureau of Econ. Res., Jul. 2014), <http://www.nber.org/papers/w20344>.

³² Thillai Rajan Annamalai et al., *Impact of changes in the transparency of infrastructure procurement and delivery on infrastructure access, costs, efficiency, price and quality: a systematic review of the evidence in developing countries* (EPPI-Centre, Institute of Education, University of London, May 2012), <https://assets.publishing.service.gov.uk/media/57a08a8ee5274a31e0000676/Infrastructure-2012Annamalai-report.pdf>.

Impact of open contracting on competition

In theory, increased competition can lead to greater value for money and cost savings (see above), open up procurement markets to new entrants and increase diversity and inclusivity (see below), and can reduce corruption (see below). Empirical evidence on the relationship between greater transparency in procurement and competition is largely positive, but complex, with a small number of studies pointing to potentially adverse outcomes.

Multiple large-scale robust quantitative studies have found strong evidence that open contracting leads to greater competition.

A 2017 paper³³ combined data from over 4 million public procurement contracts in Europe between 2006 and 2015 with voter behavior data from a large-scale regional survey. It found that one additional information item published (out of ten items considered³³) decreased single bidding by 0.4–0.7% across different regression models.³⁴ It estimated that increasing transparency by five items on average could decrease single bidding by 2–3.5% and could save EUR 3.6–6.3 billion across the EU. The paper concluded that pre-award transparency had a stronger effect on corruption risks than post-award transparency.³⁵

Combining data on almost 34,000 firms from the World Bank’s Enterprise Surveys with data from Public Expenditure and Financial Accountability (PEFA) assessments in 88 countries, a 2017 World Bank study found that firms are more likely to participate in public procurement markets in countries with more transparent procurement systems, where exceptions to open competition in tendering must be explicitly justified. The study also found some evidence that more transparent systems also encourage more bidding by firms, in particular smaller firms for whom transaction costs in learning about bidding opportunities are more burdensome.³⁶ Another study using World Bank data (this time, a database of World Bank financed contracts), found that an increase in advertising of bid opportunities led to a significant increase in the level of competition (bids). The study also suggested that a relatively modest increase in advertising and transparency had an economically meaningful impact on procurement outcomes.³⁷ In a similar vein, a regression discontinuity design in Italy found that online advertisement of bidding opportunities on the national public procurement portal had a positive effect on the number of bidders, prevalence of non-local winners, and price discounts as compared to tender advertisement in local newspapers.³⁸

³³ These items are: eligible languages; selection method; criteria information; estimated duration of the contract; CPV codes; winner’s name; NUTS codes; subcontracting information; contract value; and use of EU funds.

³⁴ Given that single-bidder contracts are on average 7.1% more expensive than contracts with multiple bidders, the associated annual price savings across Europe are substantial.

³⁵ Monika Bauhr et al., *Lights on the Shadows of Public Procurement: Transparency in government contracting as an antidote to corruption?* (Digiwhist, 2017), http://digiwhist.eu/wp-content/uploads/2017/09/D3.2-Light-on-the-Shadows-of-Public-Procurement_corr.pdf.

³⁶ Stephen Knack, Nataliya Biletska, and Kanishka Kacker, *Deterring Kickbacks and Encouraging Entry in Public Procurement Markets: Evidence from Firm Surveys in 88 Developing Countries* (Pol’y Res. Working Paper 8078) (World Bank Group, May 2017), <https://documents1.worldbank.org/curated/en/817871496169519447/pdf/WPS8078.pdf>.

³⁷ Charles Kenny and Ben Chrisman, *Results Through Transparency: Does Publicity Lead to Better Procurement?* (Working Paper 437) (Center for Global Development, Sep. 2016), <https://www.cgdev.org/sites/default/files/results-through-transparency-does-publicity-lead-better-procurement-working-paper-437.pdf>.

³⁸ Decio Coviello and Mario Mariniello, “Publicity requirements in public procurement: Evidence from a regression discontinuity design” *J. of Public Econ.* 109 (Jan. 2014): 76–100. <https://www.sciencedirect.com/science/article/abs/pii/S0047272713002107>.

Using a difference-in-differences design, a more recent study (2021) found that procurement officials were more likely to award contracts above certain size thresholds through open bidding following the introduction of two open data initiatives in the EU (the addition of archival procurement data to the EU Open Data Portal and the launch of the Opentender platform). The fact that findings were consistent across two different settings at different times suggests that these inferences are likely to apply more broadly.³⁹

A 2021 review of evidence regarding benefits of—and policies for—open competition (including the studies mentioned above) concluded that **open competition can benefit both efficiency and anticorruption, with many estimates that competition reduces prices between 10% and 20%.** Among the reviewed policy interventions, the study found that introducing e-procurement and widening advertisement of tenders had the most significant effects.⁴⁰

There are also numerous observational examples of the positive effect of open contracting on competition

Research by the Open Contracting Partnership found that the introduction of the ProZorro platform in Ukraine led to a 15% increase in the average number of bids per tender and a 45% increase in the average number of unique suppliers.⁴¹ Transparency International Slovakia recorded a 16% drop in the share of tenders with a single bidder and an increase in the number of bidders from 1.6 firms to 3.7 companies following 2014 legal requirements to publish contracts online.⁴² In Colombia, following the introduction of open contracting reforms in 2015, 50% of contractors that won government bids had never participated in public contracting before.⁴³ Recent analysis of medicine procurement in Chile by the Open Contracting Partnership, shows that an increase of one tenderer reduces the price by approximately 5% on average per medicine.⁴⁴ However, another recent study using open contracting data in Chile and Portugal found that the number of bidders and the number of items procured have a very small effect on duration times, which suggests that greater competition is not detrimental to efficiency.⁴⁵

Nevertheless, evidence of effects from greater transparency on competition are not unambiguous. For example, it may be that once a certain threshold is reached, increasing competition may depend on other factors beyond transparency. There is also some evidence to suggest that less competition may, in some cases, lead to efficiency gains.

A 2020 study on the short-term effects of public procurement transparency reforms on corruption risks, institutional efficiency, competition, and prices in Mexico, Paraguay, and Slovakia found that increasing the amount and accessibility of data publication in public procurement was unlikely to lead to short-term procurement improvements in countries with considerable data transparency at the outset, as is the case in the three countries. (It should be noted, however, that there were some issues with the quality of data in all three

³⁹ Raphael Duguay, Thomas Rauter, and Delphine Samuels, *The Impact of Open Data on Public Procurement* (SSRN, 8 Dec. 2021), <https://ssrn.com/abstract=3483868>.

⁴⁰ Isabelle Adam, Alfredo Hernandez Sanchez, and Mihály Fazekas, *Global Public Procurement Open Competition Index* (Working Paper GTI-WP/2021:02) (Government Transparency Index, 2021), http://www.govtransparency.eu/wp-content/uploads/2021/09/Adam-et-al_Evidence-paper_procurement-competition_210902_formatted_2.pdf.

⁴¹ Kathrin Frauscher, Karolis Granickas, and Leigh Manasco, “Learning Insights: Measuring results from open contracting in Ukraine” (OCP, 19 Apr. 2017), www.open-contracting.org/2017/04/19/learning-insights-measuring-results-ukraine/.

⁴² Gabriel Šipoš, Samuel Spáč, and Martin Kollárik, *Not in force until published online. What the radical transparency regime of public contracts achieved in Slovakia* (Transparency International Slovakia, 2015), <https://www.transparency.sk/wp-content/uploads/2015/05/Open-Contracts.pdf>.

⁴³ Colombia Compra Eficiente, *Resultados del sistema de indicadores* [Results of the Indicator System].

⁴⁴ OCP, “Diagnosis open: how open contracting is bringing down the cost of medicines in Chile” (29 Jan. 2021), <https://www.open-contracting.org/2021/01/29/diagnosis-open-how-open-contracting-is-bringing-down-the-cost-of-medicines-in-chile/>.

⁴⁵ Camila Salazar, Juan Pane, and Romina Fernández, *A duration analysis of public procurement processes* (OCP, 2022), <https://www.open-contracting.org/resources/a-duration-analysis-of-public-procurement-processes/>.

countries.⁴⁶) In Mexico, procurement reforms⁴⁷ led to a 4%–9% increase in the share of single-bidder contracts in the very short-run but a decrease in the share of non-open procedures by 0%–2%. In Paraguay, reforms⁴⁸ led to a small and statistically weak deterioration in bidding numbers in the short term as well as a 5% increase in recurring winners. In Slovakia, reforms⁴⁹ led to a decrease of 19% in the share of single-bidder contracts, and an increase in the number of bids per contract by two on average, although the share of non-open procedures and relative prices did not change significantly.⁵⁰ Additional evidence suggests that the launch of the Paraguayan government's open contracting portal and redesign of its procurement portal did not appear to have had a significant influence on competition, although this may be because suppliers had already been using the government's online procurement tools for a decade by then.⁵¹

Furthermore, a 2018 empirical study of public works procurement in Italy found that more competitive bidding may exaggerate the negative effects of existing corruption on the efficiency of contract execution. According to their analysis, more competitive bidding (more bidders plus the use of auctions instead of negotiations) can widen the scope for opportunistic behavior by incentivizing suppliers to underbid in order to increase the chance of being awarded the contract. In the authors' analysis, if the likely result of more competition at the bidding stage is underbidding, this increases the potential gains that firms can realize through corrupt activities leading to renegotiation of contracts.⁵²

Another study of public works in Italy, based on regression discontinuity analysis, found that awarding direct contracts without competition (i.e., increased discretion) led to a significant increase in the probability that the same firm was awarded a project repeatedly by the same buyer but that this did not adversely affect procurement outcomes. Increased discretion appears to reduce the total duration of the work, to lead to the selection of larger firms (which have typically better quality-control systems), and to reduce the number of firms submitting bids, saving administrative costs.⁵³ A regression analysis of 180 contracts for social housing between 2006 and 2009 in Paris also found that limiting competition may result in lower transaction costs without leading to adverse effects in terms of greater corruption or favoritism.⁵⁴ Earlier analysis of social housing contracts from Paris suggested that negotiated contracts combined with greater transparency reduced bid prices by 26% and also reduced the probability of bid renegotiation.⁵⁵ Similarly, the study of open data initiatives in the EU cited above found that competitive contracts were more likely to experience costly

⁴⁶ In Mexico, for example, 20%–30% of the contracts do not have information on key variables. In Paraguay, buyers are not legally required to record all bids they have received, which leads to an under-estimation of the number of bids. In Slovakia, the data collection process is prone to error due to the fact that the same information is reported in many different and changing formats.

⁴⁷ Key reforms: Transition to OCDS format on the open contracting portal (2017)

⁴⁸ Key reforms: Launch of a new public procurement transparency portal, including transition to OCDS format

⁴⁹ Key reforms: Mandatory comprehensive online publishing of procurement documents

⁵⁰ Isabelle Adam, Mihály Fazekas, and Bence Tóth, *Measuring the benefits of open contracting: Case studies on Mexico, Paraguay, and Slovakia* (GTI-WP/2020:01) (Government Transparency Institute, 20 Jan. 2020), <http://www.govtransparency.eu/measuring-the-benefits-of-open-contracting-case-studies-on-mexico-paraguay-and-slovakia/>.

⁵¹ Sophie Brown and Georg Neumann, "Paraguay's transparency alchemists: How citizens are using open contracting to improve public spending" (OCP, 2 Oct. 2017), <https://medium.com/open-contracting-stories/paraguays-transparency-alchemists-623c8e3c538f>.

⁵² Massimo Finocchiaro Castro et al., *Is competition able to counteract the inefficiency of corruption? The case of Italian public Works* (SSRN, 2 Apr. 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2708790.

⁵³ Decio Coviello, Andrea Guglielmo, and Giancarlo Spagnolo, "The effect of discretion on Procurement Performance" *Management Science* 64, no. 2 (2017), http://tintin.hec.ca/pages/decio.coviello/research_files/discretion.pdf.

⁵⁴ Lisa Chever, Stéphane Saussier, and Anne Yvrande-Billon, "The Law of Small Numbers: Investigating the Benefits of Restricted Auctions for Public Procurement" *Applied Econ.* 49, no. 42 (2017): 4241–4260, https://extranet.sioe.org/uploads/isnie2012/chever_saussier_yvrande-billon.pdf.

⁵⁵ Lisa Chever and John Moore, "When More Discretionary Power Improves Public Procurement Efficiency: An Empirical Analysis of Auctions with Negotiation and a Reduction in Formalism" (EPPP Chair, May 2012), http://chaire-eppp.org/files_chaire/chever_moore_2013_-_negotiated_procedures.pdf.

modifications because the shift to open bidding introduces rigidity that limits officials' discretion in selecting suppliers based on personal information. Overall, the authors suggest that open procurement data may promote competitive bidding but lead to contracts with weaker execution performance.⁵⁶

⁵⁶ Duguay, Rauter, and Samuels, *The Impact of Open Data on Public Procurement*.

Impact of open contracting on corruption and service delivery

The role of open contracting in preventing corruption and strengthening service delivery lies largely in the value of open data to enable both formal (state) and informal (civil society) oversight. In theory, this monitoring can deter corruption and fraud. It can also result in cost savings and greater efficiencies in the use of public funds (see above) and help identify suspicious activity and potential leakage of public funds to support services. Evidence from both experimental research and observational studies would appear to support these claims.

Evidence from a range of contexts indicates that the threat of external audits and third-party monitoring can positively impact procurement outcomes.

The influential 2017 World Bank study cited above, based on data from almost 34,000 firms, found that timely external audits are strongly associated with lower procurement-related kickbacks.⁵⁷ A 2017 randomized study of road construction across five Afghan provinces over four years found that new roads were of significantly higher quality and more durable in neighborhoods where the community were involved in monitoring the implementation of construction projects. These gains were widely shared along the monitored roadway, and not only near the trained villages. Success was attributed to the skills acquired by monitors to relay information on road quality and the strength of community mobilization to act upon this information.⁵⁸ A 2017 field experiment in Peru comparing 200 district governments implementing infrastructure projects found that those districts that were pre-notified of monitoring by a civil society organization (with the support of the country's anti corruption agency) completed the public works at a similar rate as those that were not, but at a significantly lower cost (51% less expensive). On average, the intervention reduced the cost of public works by approximately USD 75,000 per public work.⁵⁹ A 2003 study in Buenos Aires, Argentina, similarly found that the prices paid for basic inputs following the introduction of monitoring and a public campaign against corruption decreased by 15% during the first 9 months of the intervention. After this period, prices increased but remained 10% lower than those prevailing before the intervention.⁶⁰

Somewhat in contrast to these results, another much-cited study from 2007, reporting on the results of a randomized control trial in Indonesia, found that increasing grassroots participation in monitoring over 600 village road projects (in the form of community review meetings and anonymous feedback forms) had little impact on cost (i.e., materials) although it did reduce missing wages. Significantly, however, the study found that the increase of audit probability from 4% to 100% led to a reduction of missing infrastructure spending of 8% but the proportion of jobs associated with the projects given to family members increased, suggesting substitution between different forms of corruption. The author concludes that grassroots monitoring may be more effective

⁵⁷ Knack, Biletska, and Kacker, *Deterring Kickbacks and Encouraging Entry in Public Procurement Markets: Evidence from Firm Surveys in 88 Developing Countries*.

⁵⁸ Eli Berman et al., "Community Monitors vs. Leakage: Experimental Evidence from Afghanistan" (Luke Condra, 2017), https://lukecondra.files.wordpress.com/2017/07/iwa_14june2017.pdf.

⁵⁹ Paul Lagunes, *Guardians of accountability: A field experiment on corruption and inefficiency in local public works* (Working Paper 54) (IGC, Nov. 2017), <https://www.theigc.org/wp-content/uploads/2017/11/Lagunes-2017-Working-paper.pdf>.

⁶⁰ Rafael Di Tella and Ernesto Schargrodsky, "The Role of Wages and Auditing during a Crackdown on Corruption in the City of Buenos Aires" *J. of Law and Econ.* 46, no. 1 (2003): 269–292, <http://ideas.repec.org/a/ucp/jlawec/y2003v46i1p269-92.html>.

for government programs that provide private goods, such as education or medical care, as individuals have a stake in ensuring that the goods are delivered. For public goods, such as infrastructure projects, incentives to monitor are much weaker so using professional auditors may be more effective.⁶¹

The effects of procurement monitoring in the context of health and education services would appear to support that monitoring of private goods can positively impact service delivery.

Following a partnership between the Department of Education of the Philippines and NGOs to monitor the department's bidding process, inspect the quality of textbooks, and track deliveries between 2002 to 2005, textbook prices fell by 50%, and volunteer observers reported 95% error-free deliveries. The quality of books also improved as demonstrated by an increase in the average shelf life of textbooks from two to four or five years by 2007. The time for a complete textbook cycle, from bidding to delivery, had shrunk by 50% to 12 months.⁶²

A 2014 paper on randomized audits of earmarked federal transfers in Brazil, based on a differences-in-differences strategy, found that the intervention greatly reduced occurrences of over-invoicing and off-the-record payments, and of procurement manipulation within health transfers. However, evidence also suggests that following the intervention, public spending fell significantly, so that corruption per dollar spent may have actually increased. Health indicators, such as hospital beds and immunization coverage, became worse as a result. The authors suggest that those responsible for procurement dramatically reduced purchases after the introduction of audits, either because they were no longer able to capture rents or because they were afraid of being punished for procurement mistakes.⁶³

There is further observational evidence from Eastern Europe that open contracting has played an important role in safeguarding healthcare funds.

In Slovakia, the publication of contracting information uncovered considerable inefficiencies in hospital procurement, including the purchase of identical CT scanners for prices that varied by more than 100%.⁶⁴ In Moldova, the adoption of the country's e-procurement system, MTender, for medical procurement led to average savings of 15.4% on transactions worth around USD 60 million. In the country's HIV/AIDS program, lower-priced generic medicines largely replaced expensive branded medicines, saving 19% for the 2020 HIV/AIDS program procurement budget.⁶⁵ In 2015, Ukraine passed its medicine procurement on to international organizations, reducing prices by 40%, with the price of one blood cancer drug costing 67 times less than previously. The number of people receiving treatment for conditions like HIV grew from 50,000 to 113,000 without the need for an increased budget. A new state agency has since taken over medical procurement via Ukraine's ProZorro platform, resulting in savings of an additional 21.5% of the budget on top of savings achieved by international organizations.⁶⁶

⁶¹ Benjamin A. Olken, *Monitoring Corruption: Evidence from a Field Experiment in Indonesia* (Working Paper 11753) (NBER, Nov. 2005), <http://www.nber.org/papers/w11753>.

⁶² Rushda Majeed, *Promoting Accountability, Monitoring Services: Textbook Procurement and Delivery, The Philippines, 2002-2005* (Innovations for Successful Societies, 2013), <https://successfulsocieties.princeton.edu/publications/promoting-accountability-monitoring-services-textbook-procurement-and-delivery>.

⁶³ G. Lichand, M. Lopes, and M. Medeiros, "Is Corruption Good for Your Health?" (Job Market Paper) (Harvard University, 2014), <https://scholar.harvard.edu/glichand/publications/job-market-paper>.

⁶⁴ Šípoš, Spáč, and Kollárik, *Not in force until published online. What the radical transparency regime of public contracts achieved in Slovakia*.

⁶⁵ OCP, "Patients, experts, and openness: A powerful combination therapy for unaffordable medicines in Moldova" (23 Nov. 2021), <https://www.open-contracting.org/2021/11/23/patients-experts-and-openness-a-powerful-combination-therapy-for-unaffordable-medicines-in-moldova/>.

⁶⁶ Yevhen Hrytsenko, "Fight for life: how Ukraine is fixing medical procurement and serving patients better" (OCP, 22 Feb. 2021), <https://www.open-contracting.org/2021/02/22/fight-for-life-how-ukraine-is-fixing-medical-procurement-and-serving-patients-better/>.

Linking procurement and beneficial ownership data to track corruption

In theory, linking procurement and beneficial ownership data can prevent fraud and corruption by detecting signs of bid-rigging and conflicts of interest. It can also help manage risks when diversifying the supplier base (see below), support verification of supplier eligibility under preferential procurement policies (see below), and support oversight by civil society through the publication of data (see above).⁶⁷ However, in practice, the systematic use of beneficial ownership data in procurement remains very limited.⁶⁸ As a result, ex-post empirical studies to determine the deterrent effect of registers or a causal link between registers and successful investigations have yet to be conducted. Nevertheless, anecdotal evidence reveals a small number of cases where beneficial ownership data has served to detect financial crime.⁶⁹

An in-depth 2013 study from Georgia demonstrates the potential value of linking such types of data (albeit not focusing on beneficial ownership data per se). The study analyzed 430,000 single sourced, non-competitive government purchases, cross-referencing them with data on company registration, asset declarations, and party donations. Transparency International Georgia found at least USD 150 million in single-sourced purchases going to companies owned by members of parliament and public officials or their spouses. In 2012, 60% of donations disclosed by the ruling party came from owners, directors, or lawyers of companies that had received contracts without tenders, with the average donation estimated to be equivalent to 4% of the contract values involved.⁷⁰

In November 2015, Slovakia introduced the public Register of Public Sector Partners for companies participating in public procurement processes. Civil society organizations in Slovakia used the register to reveal that 190 of the listed beneficial owners were public officials (who might have a conflict of interest when it comes to procurement) and to verify whether companies were providing information on their beneficial owners as part of winning public contracts (as required by law). In March 2016, it was found that the public news agency, TASR, had signed a contract for a computer upgrade worth EUR 110,000 with a company that had not provided its beneficial owner. The same was true for two contracts awarded by a local government. When the new register was launched in 2017, a state-run rail operator was forced to withdraw from a highly criticized 50-year lease of the country's main train station when citizens discovered that the contractor did not provide information on its beneficial owner.⁷¹

⁶⁷ Open Ownership, *Beneficial ownership data in procurement* (Mar. 2021), <https://www.openownership.org/uploads/oo-briefing-bo-data-in-procurement-2021-03.pdf>.

⁶⁸ Several countries (e.g., Mexico, Ghana, and Afghanistan) have made commitments specifically to promote beneficial ownership transparency in public procurement processes. See Adam Smith International, *Towards a Global Norm of Beneficial Ownership Transparency* (Jul. 2019), <https://adamsmithinternational.com/app/uploads/2019/07/Towards-a-Global-Norm-of-Beneficial-Ownership-Transparency-Phase-2-Paper-March-2019.pdf>. Meanwhile, Open Ownership is working to support countries (including Indonesia, Nigeria, and South Africa) to link their beneficial ownership and procurement data. Open Ownership, "Publications" (accessed Mar. 2022), <https://www.openownership.org/resources/?type=case-studies>.

⁶⁹ Theo Van der Merwe, *Beneficial ownership registers: Progress to date* (U4 Helpdesk Answer) (7 Apr. 2020), <https://www.u4.no/publications/beneficial-ownership-registers-progress-to-date>.

⁷⁰ Transparency International Georgia, *Simplified Procurement—Corruption Risks in Non-Competitive Government Contracts* (Dec. 2013), https://transparency.ge/sites/default/files/post_attachments/Simplified%20procurement%20-%20Eng%20.pdf.

⁷¹ OGP, *Anti-Corruption Initiatives: Beneficial Ownership*, *Open Government Partnership Global Report* (2019), https://www.opengovpartnership.org/wp-content/uploads/2019/05/Global-Report_Beneficial-Ownership.pdf.

Transparency International Czech Republic also recently uncovered a conflict of interest in the Czech Republic using Slovakia's public register to show that Prime Minister Andrej Babiš had a controlling share of Agrofert, a large Czech agriculture conglomerate. As the sole beneficiary of two trust funds that owned 100% of the shares of Agrofert, Babiš was able to receive millions of euros in subsidies from the EU every year, which was ruled to be a clear conflict of interest by the European Commission.⁷²

Similarly in Ukraine, procuring entities are legally required to refuse a bidder from participating in a procurement procedure if information about its beneficial owner is not contained in the country's beneficial ownership register, the Unified State Register. Information about bidders, awardees, and their beneficial owners is accessible online, free of charge on the country's online procurement platform, ProZorro, supporting public scrutiny and oversight.⁷³

⁷² Merwe, *Beneficial ownership registers: Progress to date*.

⁷³ Open Ownership, *Beneficial ownership data in procurement*; Zosia Szykowski and Tom Mayne, *Improving beneficial ownership transparency in Ukraine: Review and recommendations* (Open Ownership, Mar. 2018), <https://www.openownership.org/uploads/oo-report-improving-bot-ukraine-2018-03.pdf>.

Impact of open contracting on social inclusion

There is little empirical evidence on the impacts of open contracting on social outcomes such as greater equality, inclusion, and gender balance in public contracting processes, or whether open contracting can be used to improve these outcomes.⁷⁴ Large scale, experimental research in this area is practically nonexistent. The evidence that does exist is largely qualitative, context-specific, and observational.⁷⁵

In theory, inclusive procurement can bring concrete economic and social benefits for the government, supporting jobs and giving the government access to a wider choice of goods, services, and skills, and generating increased competition and economic growth.⁷⁶ There is, for example, some evidence that more equal procurement policy leads to growth for businesses with more diverse supply chains. One study found that leading procurement organizations that have a higher adoption rate of supplier diversity programs generate 133% greater return on the cost of procurement operations than average performers, driving an additional USD 3.6 million to their bottom line for every USD 1 million in procurement operations costs.⁷⁷ A recent study used regression model estimations to conclude that improvements in gender-related democracy variables are associated with lower levels of single bidding (which the authors took as a proxy for corruption risks) in public procurement. They estimated the probability of a woman-led company winning a contract with a single bid is lower by 2.3%.⁷⁸

Based on case study analysis of open contracting and inclusion in Indonesia, Philippines, Nigeria, South Africa, and Kenya, another study (2020) concluded that implementing open standards was, on its own, unlikely to support greater inclusion. In all five cases, data was the least important part of including new actors—including marginalized communities—in public contracting. In most cases, open contracting data published by governments did not disrupt existing data flows or challenge the dominance of networks of powerful

⁷⁴ van Schalkwyk and Cañares, *Open Contracting and Inclusion*.

⁷⁵ There is a body work on the barriers to entry in procurement for a range of disadvantaged groups and emerging guidance on how open contracting can support women and minorities. These resources include Gender-Smart procurement or GESI policies (e.g., improving small business access, fostering coalitions, building SME/MWBE capacity to bid for and win public contracts, simplifying processes, ensuring timely payments, etc.). Oxford Insights has recently developed both [qualitative](#) (Oxford Insights, “Gender Equality and Social Inclusion in Public Procurement: Qualitative Framework” (accessed Mar. 2022), <https://www.oxfordinsights.com/gesiquantitativeframework>) and [quantitative](#) frameworks for assessing Gender Equality and Social Inclusion (GESI) in public procurement (Sabrina Martin et al., *GESI MEAL Indicator Framework - User Guide* (Oxford Insights, Aug. 2020), <https://static1.squarespace.com/static/58b2e92c1e5b6c828058484e/t/5f8872464b4f4375972a3d22/1602777671944/GESI+report+-+User+Guide.pdf>). There are also several globally recognized ICT procurement accessibility standards which serve as guidance for both public procurers and suppliers, including EN 301 549 (EU), WCAG 2.0/ISO/IEC 40500, Section 508 of the U.S. Rehabilitation Act, and the Global Initiative for Inclusive ICTs (G3ict). However, the empirical basis for these standards appears to be largely untested to date.

⁷⁶ Sabrina Martin et al., *Gender Equality and Social Inclusion in ICT Procurement: Discovery Report* (Oxford Insights, Aug. 2020), <https://static1.squarespace.com/static/58b2e92c1e5b6c828058484e/t/5f887193b824754224847cfd/1602777495732/GESI+report+-+Discovery+Report.pdf>.

⁷⁷ EY, *How can greater supplier diversity unclog your growth pipeline?* (2015), https://businessdocbox.com/Business_Software/91218286-How-can-greater-supplier-diversity-unclog-your-growth-pipeline.html.

⁷⁸ Mihály Fazekas, Yuliia Kazmina, and Johannes Wachs, *Gender in European public procurement: Extent, distribution, and impacts* (European Bank, 2020), http://www.govtransparency.eu/wp-content/uploads/2021/09/Fazekas-et-al_Gender-in-European-public-procurement_published_2020.pdf.

individuals.⁷⁹ The same authors came to similar conclusions in an earlier (2018) paper on the outcomes of fourteen open data projects (including but not limited to open contracting data) on inclusive development. They found no evidence that the open data initiatives resulted in greater inclusion, especially of those who are habitually excluded, but did find evidence of the “catalytic and convening properties” of open data across a range of contexts, insofar as open data was found to bring together diverse stakeholders who shared a common interest in resolving a mutual problem using a free public resource.⁸⁰

A 2020 evaluation of Hivos’ Open Up Contracting Programme finds that marginalized groups tended only to engage with the data issues that strongly impacted their lives or created tangible opportunities to engage with government contracting processes. At the same time, tech-based mechanisms were found to pose multiple access challenges for marginalized groups; moving contracting processes online could inadvertently exclude those who rely on traditional means of communication (e.g., newspaper and radio) to find out about procurement opportunities. Meanwhile, the costs of effectively engaging marginalized groups were often underestimated, e.g., mobility for meetings, payments to the radio stations that reach remote areas, translations, the creation of women-only or physically accessible spaces, etc.⁸¹

There is observational evidence that open contracting approaches, particularly gender-smart policies, can impact women’s participation in procurement markets. As women-owned businesses employ more women, a higher number of females winning procurement bids can impact females in the workforce, although the precise nature of this relationship between procurement policies and the female labor force is unknown.⁸²

It has been suggested that in order to ensure that open contracting is more inclusive for women, governments should simplify applications and reduce the need for specific knowledge and time required to assemble tenders. Excessive requirements can present a barrier for women-owned and women-led small and medium enterprises (SMEs), which can be addressed by reducing legal and procedural requirements and ensuring that the included requirements are essential for the delivery of the service and work. In some cases, transparency and anticorruption requirements may inadvertently restrict or make it more difficult for women-owned and women-led SMEs to apply or meet the requirements.⁸³

Reforms introduced in the Dominican Republic in 2012 included the development of a national information system and e-procurement platform, training sessions for different actors in the procurement system, and regular, open discussions between these groups. These reforms led to a 16% increase in contracts awarded to smaller businesses led by women, from 10% in 2012, to 26% in 2019. The proportion of competitive public tenders awarded to women also increased, from 20% in 2013 to almost 30% in 2019.⁸⁴ In Argentina, the Inter-American Development Bank (IDB) used a difference-in-differences strategy in 2021 and found that, depending on the estimation model used, the use of Argentina’s e-procurement platform COMPR.AR (see further discussion above) increased the probability that a bid would be awarded to a woman-led business by between 2.48 and 4.22%.⁸⁵

⁷⁹ van Schalkwyk and Cañares, *Open Contracting and Inclusion*.

⁸⁰ Francois van Schalkwyk and Miko Cañares, “Open Government Data for Inclusive Development” in Matthew L. Smith and Ruhiya Kris Seward, eds., *Making Open Development Inclusive* [pre-print] (MIT Press, 2019), https://www.researchgate.net/publication/328995817_Open_Government_Data_for_Inclusive_Development.

⁸¹ Erika Lopez Franco, *Evaluation of the Hivos Open Up Contracting Programme – Engagement with marginalized groups* (Article 19, IIED, and Hivos, Sep. 2020), <https://hivos.org/assets/2020/11/ETE-OuC-Marginalized-groups-Case-Study.pdf>.

⁸² Kristin Lenz and Maria Aspan, “Women Entrepreneurship Report: Exclusive Report: Hundreds of Female Founders Speak Out on Ambition, Politics, and #MeToo” (Inc. and Fast Company, 2018), <https://www.inc.com/women-entrepreneurship-report/index.html>.

⁸³ UN Women and OCP, *Empowering Women through Procurement and Enabling Inclusive Growth* (2021), <https://www.unwomen.org/sites/default/files/2021-11/Empowering-women-through-public-procurement-and-enabling-inclusive-growth-en.pdf>.

⁸⁴ Romina Colman, “Women win one in four contracts in the Dominican Republic thanks to inclusive procurement reforms” (OCP, 23 Sep. 2020), <https://www.open-contracting.org/2020/09/23/women-win-one-in-four-contracts-in-the-dominican-republic-thanks-to-inclusive-procurement-reforms/>.

⁸⁵ Gastón Pierri, María José Jarquín, and Roberto De Michele, *Transparency and Gender: The Impact of Electronic Purchasing on Access*

Chile's procurement agency adopted a 2015 action plan to enable women equal access to government procurement through focused support to women-owned SMEs, training and certification, and regulatory reform. This contributed to the share of women participating in the public procurement system reaching 36.5% in 2016, which corresponds to 21,345 women quoting on tenders, offering contract terms or receiving purchase orders.⁸⁶

In 2013, the Kenyan government began reserving 30% of the government's procurement of goods, services and civil works for enterprises owned by women, youth, or persons with disabilities. This has led to a gradual increase in the proportion of public-procurement spending going to women-owned businesses and other disadvantaged groups. According to a 2020 Kenya economic survey, tenders reserved and awarded to women increased from USD 67 million in 2015/16 to USD 140 million in 2018/19. Additionally, the number of tenders awarded to women increased by 100% from 2015 to 2019/20 (from 8,795 to 17,564).⁸⁷

There has been some limited empirical research, with mixed results, on the effect of preferential treatment policies designed to open up procurement opportunities, most often considered in the context of SME access to procurement markets.

In theory, preferences (assigning extra points for certain bidders and product groups), set-asides (preserving some tenders for certain bidders), or targeted capacity development (lowering tendering costs for certain groups) should lead to both higher participation and a higher success rate of such bidders and offers.⁸⁸ While these policies may carry costs if the preferred bidders are less productive or have lower value-per-price products, the net effect may be positive on value for money if preferential policies lead to wider access and stronger competition,⁸⁹ given that competition has been found to reduce prices between 10% and 20%, as discussed above.⁹⁰

A 2007 study used data from California auctions for road construction contracts, where small businesses received a 5% bid preference in auctions for projects using only state funds. The study found that procurement costs were 3.8% higher in auctions using preferences. This higher cost was attributed to fewer lower cost large firms participating in these auctions.⁹¹

A 2013 paper from Japan examined the extent to which small-business set-asides increased government procurement costs, using data on Japanese public construction projects. Here, approximately half of the procurement budget was set aside for SMEs. The study found that production costs went up due to SME preferences, but that the SME preference program decreased overall procurement costs by about 0.10%–0.23% between 2005 and 2009. Furthermore, it estimated that approximately 40% of SMEs would exit the procurement market if set-asides were removed and that the resulting lack of competition would increase government procurement costs more than it would offset the production cost inefficiency.⁹²

to Public Bidding by Women-led Small and Medium-sized Enterprises (IDB, Dec. 2021), <https://publications.iadb.org/en/transparency-and-gender-impact-electronic-purchasing-access-public-bidding-women-led-small-and>.

⁸⁶ Susan Harris Rimmer, ed., *Gender-smart Procurement Policies for Driving Change* (Chatham House, Dec. 2017), <https://www.chathamhouse.org/sites/default/files/publications/research/Gender-smart%20Procurement%20-%202020.12.2017.pdf>.

⁸⁷ UN Women and OCP, *Empowering Women through Procurement and Enabling Inclusive Growth*.

⁸⁸ Fazekas and Blum, *Improving Public Procurement Outcomes Review of Tools and the State of the Evidence Base*.

⁸⁹ Justin Marion, "Are bid preferences benign? The effect of small business subsidies in highway procurement auctions" *J. of Public Econ.*, 91, no. 7–8 (Aug. 2007), 1591–1624, <https://www.sciencedirect.com/science/article/abs/pii/S0047272706001733>.

⁹⁰ Isabelle Adam, Alfredo Hernandez Sanchez, and Mihály Fazekas, *Global Public Procurement Open Competition Index* (Working Paper GTI-WP/2021:02) (Government Transparency Index, 2021).

⁹¹ Marion, "Are bid preferences benign? The effect of small business subsidies in highway procurement auctions."

⁹² Jun Nakabayashi, "Small business set-asides in procurement auctions: An empirical analysis." *J. of Public Econ.* 100 (Apr. 2013): 28–44, <https://www.sciencedirect.com/science/article/abs/pii/S0047272713000169>.

However, impact assessment studies by the European Commission suggest that preference schemes had a minimal effect on the economies of the regions where they were used, both in terms of the volume of contracts and economic growth.⁹³ Other research claims that the full impacts of preferential policies remain unknown due to their relatively recent implementation.⁹⁴ Fazekas and Blum (2021) concur there is not yet sufficient evidence to estimate the long-term effects of preferential treatment policies on firm investment decisions and market dynamics.⁹⁵

⁹³ Rimmer, ed., *Gender-smart Procurement Policies for Driving Change*.

⁹⁴ *Id.*

⁹⁵ Fazekas and Blum, *Improving Public Procurement Outcomes Review of Tools and the State of the Evidence Base*.

Costs and unintended consequences of open contracting

The evidence on the potential costs and trade-offs of open contracting is mixed but suggests that these are often overestimated and outweighed by the benefits.

In theory, the costs of disclosing contract information may include those associated with finding, retrieving and redacting sensitive information, developing and licensing an e-procurement system, and human resources for public engagement and data entry.⁹⁶ Beyond the economic costs, there are also concerns around commercial, national-security, and privacy interests and fears that greater transparency may potentially support collusion.⁹⁷

Fazekas and Blum (2021) suggest that the costs of making data publicly available on transparency and watchdog portals, combined with oversight and monitoring costs may be substantial.⁹⁸ On the one hand, building and linking disparate data systems, standardizing data formats, and delivering reliable data management infrastructures may incur significant costs and encounter resistance from public administrations. Additionally, reporting requirements are often neglected, making essential data erroneous, missing, or incomprehensible. According to their analysis, “making this move to a data rich approach has proven to be surprisingly challenging with some governments and international organizations[,] even decreasing their ‘Big Data readiness’ rather than improving it.”⁹⁹

Others suggest that the cost of running transparency and watchdog portals is negligible when set against the volume of funds spent through them annually¹⁰⁰ or when indirect benefits are taken into account. The total cost of capacity building and oversight mechanisms under the World Bank’s Indonesia Urban Poverty Program, for example, was estimated at 13% of project costs, (USD 24 million out of a USD 186 million project) compared to the USD 32,000 returned thanks to the project suggesting that the costs of the project were significantly higher than the direct economic benefit that it delivered. However, given that corruption has been found to have negative impacts on productivity, investment, profitability, and growth¹⁰¹, the economic benefits of publication may be considerably larger than the direct financial benefits to the government in terms of lower initial contract prices.¹⁰²

On the whole, the start-up costs of e-procurement are relatively low. The Georgian e-procurement system, which is used by central and local levels of government, was developed for less than EUR 800,000 and digitizing the archives cost less than EUR 50,000.¹⁰³ Ukraine’s e-procurement system cost less than EUR 4 million from inception in 2014 to implementation in 2017, counting volunteer time, training of government procurement officials, and a broad national communications program.¹⁰⁴

⁹⁶ OCP, *Mythbusting Confidentiality in Open Contracting* (2018), <https://www.open-contracting.org/wp-content/uploads/2018/07/OCP18-Mythbusting.pdf>.

⁹⁷ Center for Global Development, *Publishing Government Contracts. Addressing Concerns and Easing Implementation* (2014), <https://www.cgdev.org/sites/default/files/publishing-government-contracts-report.pdf>.

⁹⁸ Fazekas and Blum, *Improving Public Procurement Outcomes Review of Tools and the State of the Evidence Base*.

⁹⁹ *Id.*, p5

¹⁰⁰ Center for Global Development, *Publishing Government Contracts. Addressing Concerns and Easing Implementation*.

¹⁰¹ DFID, “Why corruption matters: understanding causes, effects and how to address them” (2015) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/406346/corruption-evidence-paper-why-corruption-matters.pdf

¹⁰² Charles Kenny, “Publishing construction contracts and outcome details” (Pol’y Res. Working Paper Series 5247) (The World Bank, 2010), <https://ideas.repec.org/p/wbk/wbrwps/5247.html>.

¹⁰³ OCP, *Mythbusting Confidentiality in Open Contracting*; Praneetha Vissapragada, *Open Government Case Study: Costing the ProZorro e-Procurement Program* (Results for Development, Aug. 2017), https://www.r4d.org/wp-content/uploads/R4D_OG-ProZorro-CS_web.pdf.

¹⁰⁴ OCP, *Mythbusting Confidentiality in Open Contracting*; Praneetha Vissapragada, *Open Government Case Study: Costing the ProZorro*

Furthermore, once contracts have been published, barriers to publication of documentations largely fall away. This suggests that one could routinely publish extensions, modifications, and evaluation reports with relatively little additional effort or expense.¹⁰⁵ A 2015 study by Transparency International Slovakia estimated that the central register of contracts cost EUR 20,000 to build and an extra EUR 4,500 for updates in the first four years of its existence. Annual maintenance costs were estimated at up to EUR 3,000 per year. The authors did, however, find that concerns related to the administrative costs of mandatory publication of contracts led to an increase in exemptions to the mandatory publication of contracts, with 13 new exemptions added to the initial 7 a year after the reforms were introduced.¹⁰⁶

With regard to commercial, national-security, and privacy concerns, it has been suggested that these only involve a small minority of contracts and can be addressed using a principles-based redaction policy. A 2014 study, for example, found that of the contracts in Australia's federal contract database in 2012, only 2.2% were flagged with confidentiality clauses.¹⁰⁷

Finally, regarding using procurement to achieve social goals, recent evidence from France suggests that this can be done at no additional cost. On average, including social clauses (i.e., requiring firms to employ a percentage of unemployed workers during contract execution) in auctions for public contracts in Paris resulted in no additional cost for the city.¹⁰⁸

Evidence suggests that fears of greater contract transparency increasing collusion are largely unfounded.

In theory, the risk of collusion with publishing contracts is greater at the upstream end of the procurement process (during the tendering round) than the downstream end (after the bid is awarded).¹⁰⁹ Some argue that proactive publication of contracting data will encourage cartels. By having bids public, firms can engage in "turn-taking" or give side payments to other cartel members as a reward for not bidding.¹¹⁰ However, evidence suggests that open contracting is unlikely to contribute to this risk and may in fact reduce it. First, there have been no known collusion cases where open contracting data was used by cartel members to self-regulate.¹¹¹ Further, a 2020 study from Ukraine found that increased data transparency coupled with citizen monitoring of the open public procurement market effectively pushed collusive bidders out of the market, which enabled real competition. The additional oversight led to a reduction of prices in the market by 20.6% and a sizeable overall welfare gain of between 2.68% and 3.11% of total procurement spending.¹¹²

The Slovakian study cited above found little evidence of increased collusion in tenders or loss of interest on the part of companies in dealing with the state as a result of mandatory contract publication.¹¹³ Indeed, a study on

e-Procurement Program (Results for Development, Aug. 2017), https://www.r4d.org/wp-content/uploads/R4D_OG-ProZorro-CS_web.pdf.

¹⁰⁵ *Id.*

¹⁰⁶ Šipoš, Spáč, and Kollárik, *Not in force until published online. What the radical transparency regime of public contracts achieved in Slovakia*.

¹⁰⁷ Center for Global Development, *Publishing Government Contracts. Addressing Concerns and Easing Implementation*.

¹⁰⁸ Stéphane Saussier and Louise Vidal, *The Cost of Social Public Procurement for Governments: The Case of Paris City* (EPPP Chair, 8 Apr. 2021), https://www.chaire-eppp.org/wp-content/uploads/2021/04/Insertion_Sociale.pdf

¹⁰⁹ Center for Global Development, *Publishing Government Contracts. Addressing Concerns and Easing Implementation*.

¹¹⁰ Patrick Bajari and Jungwon Yeo, "Auction Design and Tacit Collusion in FCC Spectrum Auctions" *Information Econ. and Policy* 21, no. 2 (Jun. 2009): 90–100, <https://www.nber.org/papers/w14441>.

¹¹¹ Center for Global Development, *Publishing Government Contracts. Addressing Concerns and Easing Implementation*.

¹¹² Bruno Baránek, Leo Musolff, and Vítězslav Titl, *Data transparency, public oversight and collusion in e-procurement* (EconPol Europe, 25 Oct. 2020), https://www.econpol.eu/sites/default/files/2020-10/Working_Paper_Titl_Vitezslav_Collusion_in_auctions.pdf.

¹¹³ Šipoš, Spáč, and Kollárik, *Not in force until published online. What the radical transparency regime of public contracts achieved in Slovakia*.

procurement data from Japan found considerable evidence that collusion was weakened by the disclosure of minimum prices. Because disclosing minimum prices makes price wars less effective, this weakens the ability of cartels to ensure their members stick to the agreed-upon collusion. When this is the case, sustaining collusive bids above the minimum price becomes more difficult.¹¹⁴

An empirical study on a sample of firms indicted by the European Commission for forming illegal cartels found that disclosing contracting information decreased cartel duration because it allows the cartel to detect a cheating member earlier than if it had to rely only on self-reported information.¹¹⁵ Furthermore, it has been suggested that one strategy to prevent and disrupt collusion is to decrease market concentration by increasing competition and the number of bidders; because the larger the number of bidders, the more firms a cartel has to co-opt in order to survive. This can be done by increasing awareness of tender opportunities, reducing bidding costs, allowing local, national, and foreign companies to participate, and allowing smaller firms to form a consortium to bid for bigger projects.¹¹⁶

¹¹⁴ Sylvain Chassang and Juan Ortner, *Collusion in Auctions with Constrained Bids: Theory and Evidence from Public Procurement* (Princeton Univ. William S. Dietrich II Econ. Theory Cntr. Res. Paper No. 072_2015) (SSRN, 20 Oct. 2015), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2683505.

¹¹⁵ Igor Goncharov and Caspar Peter David, “Does reporting transparency affect industry coordination? Evidence from the duration of international cartels” (forthcoming in *The Accounting Rev.*) (SSRN, 6 Apr. 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2530385.

¹¹⁶ OECD, “Policy Roundtable: Collusion and Corruption in Public Procurement” (2010), www.oecd.org/competition/cartels/46235884.pdf.

Conclusions: Does the evidence support open contracting reforms?

According to Fazekas and Blum's (2021) wide-ranging review, the theory on the impact of public procurement reforms on improving value for money and promoting fair and open access is strong, and although the empirical basis is weaker, it is improving.¹¹⁷ The present review of the state of evidence across different outcome areas largely supports this conclusion, with the main findings summarized as follows:

- Evidence on economic benefits and the effects of open contracting on competition is fairly robust, based largely on empirically sound research design. The results are largely positive in favor of open contracting, especially in terms of cost savings and efficiency.
- Evidence on the link between open contracting and corruption and service delivery is more limited, with fewer studies in this area as compared to studies related to competition and efficiency. The existing evidence, based on a mix of experimental research and observational evidence, is largely positive and suggests that the threat of external audits and third-party monitoring in particular can have a positive impact on reducing corruption in service delivery.
- Empirical evidence on the benefits of linking open contracting and beneficial ownership data is practically nonexistent to date.
- Evidence on the impact of open contracting on social inclusion is weak and largely observational, with results suggesting that the potential for open contracting to contribute to greater inclusion is limited in the absence of wider efforts to address structural inequalities. There is, however, some evidence that open contracting approaches may have a positive impact on women's participation in procurement markets.

Crucially, the inadequate context specificity of most of the available evidence limits our understanding of the conditions under which open contracting reforms may be most effective. This is a critical knowledge gap. Existing evidence offers interesting avenues for future research in this regard. For example:

- It has been suggested that transparency and watchdog portals have to be combined with sufficient motivation and capacity on the part of civil society and citizens to act on the revealed information.¹¹⁸ How important are these factors in determining the success of open contracting reforms in practice?
- Evidence also suggests that effective procurement monitoring requires direct observation of performance and mismanagement, which may be easier to achieve in certain areas like construction than areas like education.¹¹⁹ Conversely, monitoring may be more effective for private goods (e.g., education) than for public goods (e.g., construction).¹²⁰ How do these apparently conflicting dynamics play out in different contexts?
- The impact of transparency has been found to hinge on the usability and accessibility of the data, with available data on official government and watchdog portals often highly aggregated and/or incomplete.¹²¹

¹¹⁷ Fazekas and Blum, *Improving Public Procurement Outcomes Review of Tools and the State of the Evidence Base*.

¹¹⁸ See Center for Global Development, *Publishing Government Contracts. Addressing Concerns and Easing Implementation*. Andrew McDewitt and Dieter Zinnbauer, *Making citizen-centred accountability last: time, money, partners, motivation* (Integrity Action, Mar. 2021), <https://integrityaction.org/media/17419/making-citizen-centred-accountability-last-integrity-action-research-report.pdf>.

¹¹⁹ Abhijit V. Banerjee et al., "Pitfalls of Participatory Programs: Evidence from a Randomized Evaluation in Education in India" *Amer. Econ. J.: Econ. Policy* 2, no. 1 (2010): 1–30, <http://www.jstor.org/stable/25760049>.

¹²⁰ Olken, *Monitoring Corruption: Evidence from a Field Experiment in Indonesia*.

¹²¹ Luciana Cingolani et al., *Towards a comprehensive mapping of information on public procurement tendering and its actors across*

To what degree does the scope, quality, and timeliness of data determine the effectiveness of open contracting in different contexts?

- This review has found that much of the existing research assesses the impacts of open contracting through a value-for-money lens rather than in terms of its potential to shape social policies. As a result, there is an important gap in our understanding of how open contracting might affect broader social outcomes such as greater equality, inclusion, and gender equity. To what extent can open contracting be leveraged to support such outcomes in practice?

Finally, it is worth making an observation regarding potential pathways to reform in the area of open contracting. A recent paper from Transparency International and the Government Transparency Institute suggests that in many lower- and middle-income contexts, framing open contracting as a way of improving efficiency and economic competition (in short, saving money) may make it more palatable than framing it as an anticorruption tool or in terms of the intrinsic value of transparency.¹²² The fact that evidence in this area (economic efficiency) is more robust and compelling than in other areas would seem to add weight to the case for highlighting this rationale when championing open contracting reforms.

Europe (Digiwhist, 19 Aug. 2016), <https://digiwhist.eu/publications/towards-a-comprehensive-mapping-of-information-on-public-procurement-tendering-and-its-actors-across-europe/>.

¹²² I. Adam, E. Dávid Barrett, and M. Fazekas, *Modelling Reform Strategies for Open Contracting in Low and Middle Income Countries* (Transparency International, 18 Nov. 2020), <http://www.govtransparency.eu/modelling-reform-strategies-for-open-contracting-in-low-and-middle-income-countries/>.

Annex 1: Overview of the Evidence

Author(s)	Title	Year	Country/ Region	Type of evidence	Main findings	Is the evidence on the benefits of open contracting largely positive, negative, or mixed?
Adam, I., Fazekas, M. and Tóth, B.	Measuring the benefits of open contracting: Case studies on Mexico, Paraguay, and Slovakia	2020	Mexico, Paraguay, Slovakia	Quantitative (Quasi-experimental)	Increasing the amount and accessibility of public procurement data is unlikely to lead to short term improvements in procurement outcomes where data transparency is already strong.	Mixed
Adam, I., Hernandez Sanchez, A. and Fazekas, M.	Global public procurement open competition index	2021	Global	Quantitative (Systematic review)	Price reduction ranging between 10% and 20% as a result of open competition.	Largely Positive
Bajari, P. and Yeo, J.	Auction design and tacit collusion in FCC spectrum auctions	2009	USA	Quantitative (Observational)	By having bids public, firms can engage in “turn-taking” or give side payments to other cartel members as a reward for not bidding.	Largely Negative
Baránek, B. Musolff, L. and Titl, V.	Data transparency, public oversight and collusion in e-procurement	2020	Ukraine	Quantitative (Regression)	20.6% reduction in prices, welfare gain of 2.68% -3.11% of the total procurement spend and reduced collusion following introduction of citizen monitoring of procurement.	Largely Positive
Bauhr, M., Czibik, A., Fazekas, M. and de Fine Licht, J.	Lights on the shadows of public procurement: transparency in government contracting as an antidote to corruption?	2017	Europe	Quantitative (Regression)	Decrease in single bidding by 0.4-0.7% thanks to publication of 1 additional information item and by 2-3.5% thanks to publication of 5 additional information items, potentially saving EUR 3.6 - 6.3 billion across the EU.	Largely Positive
Berman, E., Callen, M., Condra, L., Downey, M. Ghanik, T. and Isaqzadeh, M.	Community monitors vs. leakage: experimental evidence from Afghanistan	2017	Afghanistan	Quantitative (Randomized trial)	New roads were of significantly higher quality and more durable in neighborhoods where the community were involved in monitoring the implementation of construction projects.	Largely Positive

Brown, S. and Neumann, G.	Paraguay's transparency alchemists: How citizens are using open contracting to improve public spending	2017	Paraguay	Quantitative (Observational)	Increase in savings on procurement costs of 1.4% and decline contract adjustments and amendments from 19% to 3% following introduction of open contracting portal and redesign of e-procurement platform, but limited influence on competition.	Mixed
Cañares, M. and van Schalkwyk, F.	Open contracting and inclusion	2020	Indonesia, Philippines, Nigeria, South Africa, Kenya	Qualitative (Case study)	Open data standards are unlikely to support greater inclusion on their own. Procurement data was the least important factor in supporting inclusion in the case studied.	Mixed
Center for Global Development	Publishing government contracts. addressing concerns and easing implementation	2014	Australia	Quantitative (Observational)	Only 2.2 percent of contracts in Australia's federal contract database with confidentiality clauses	Largely Positive
Chassang, S. and Ortner, J.	Collusion in auctions with constrained bids: theory and evidence from public procurement	2015	Japan	Quantitative (Regression)	Disclosure of minimum prices weakens collusion and makes cartel enforcement more difficult.	Largely Positive
Chever, L., and Moore, J.	When more discretionary power improves public procurement efficiency: an empirical analysis of auctions with negotiation and a reduction in formalism	2021	France	Quantitative (Regression)	Negotiated contracts combined with greater transparency reduced bid prices by 26% and also reduced the probability of bid renegotiation	Mixed
Chever, L., Saussier, S., and Yvrande-Billon, A	The law of small numbers: investigating the benefits of restricted auctions for public procurement	2017	France	Quantitative (Regression)	Limiting competition resulted in savings on transaction costs without any adverse effects in terms of greater corruption or favoritism.	Largely Negative
Colman, R.	Women win one in four contracts in the Dominican Republic thanks to inclusive procurement reforms	2020	Dominican Republic	Quantitative (Observational)	16% increase in contracts awarded to smaller businesses led by women, and increase in the proportion of competitive public tenders awarded to women from 20% to almost 30% thanks to open contracting reforms.	Largely Positive

Coviello, D. Guglielmo, A. and Spagnolo, G.	The effect of discretion on procurement performance	2018	Italy	Quantitative (Regression)	Increased discretion reduces the total duration of public works, leads to the selection of larger firms (with better quality- control systems), and reduces the number of firms submitting bids, saving administrative costs. It also increases the probability that the same firm is awarded a project repeatedly.	Largely Negative
Coviello, D. and Mariniello, M.	Publicity requirements in public procurement: Evidence from a regression discontinuity design	2014	Italy	Quantitative (Regression)	Positive effect of online advertisement on the number of bidders, prevalence of non- local winners and price discounts.	Largely Positive
Colombia Compra Eficiente	Resultados del sistema de indicadores	2015	Colombia	Quantitative (Observational)	Reduction in time to award contracts by 16 days on average following introduction of e-procurement platform. 50% of contractors that won government bids had never participated in public contracting before.	Largely Positive
de Michele, R. and Pierri, G.	Transparency and digital government. the impact of COMPR.AR in Argentina	2020	Argentina	Quantitative (Difference-in differences)	4% decrease in prices, estimated USD 35 million in savings and reduction in the duration of public procurement process by 11 days following the introduction of e-procurement platform.	Largely Positive
De Silva, D., Dunne, T., Kankanamge, A. and Kosmopoulou, G	The impact of public information on bidding in highway procurement auctions	2008	USA	Quantitative (Difference-in differences)	Lower average bids and a lower winning bid, as well as increased survival rates of new entrants thanks to publication of project cost estimates.	Largely Positive
Di Tella, R., and Schargrodsky, E.	The role of wages and auditing during a crackdown on corruption in the City of Buenos Aires	2003	Argentina	Quantitative (Regression)	Prices for basic hospital inputs initially decreased by 15% following the introduction of monitoring and a public campaign against corruption and remained 10% lower in the longer term.	Largely Positive

Duguay, R. Rauter, T. Samuels, D.	The impact of open data on public procurement	2021	Europe	Quantitative (Difference-in differences)	Procurement officials were more likely to award treated contracts through open bidding following the introduction of open data initiatives. However, competitive contracts were more likely to experience costly modifications.	Mixed
Emery, T., Spruk, R. and Mélon, L.	Does E-procurement matter for economic growth? subnational evidence from Australia	2020		Quantitative (Counterfactual analysis)	Mixed evidence of economic growth gains from implementing e-procurement (dependent on the quality of governance and policy implementation).	Mixed
EY	How can greater supplier diversity unclog your growth pipeline?	2015	-	Quantitative (Observational)	Higher adoption rate of supplier diversity programs generates 133% greater return on the cost of procurement operations	Largely Positive
Fazekas, M. and Blum, J. R.	Improving public procurement outcomes: review of tools and the state of the evidence base	2021	Global	Quantitative and qualitative (Systematic review)	Quality of evidence is mediocre. Most intervention types achieve 5%–10% price savings if well implemented. Costs of transparency and oversight may be substantial.	Mixed
Fazekas, M. Kazmina, Y. and Wachs, J.	Gender in European public procurement: Extent, distribution, and impacts	2020	Global	Quantitative (Regression)	Improvements in gender-related democracy variables are associated with lower levels of single bidding (a proxy for corruption risks) in public procurement. The probability of a women-led company winning a contract with a single bid is lower by 2.3%.	Largely Positive
Finocchiaro Castro, M., Guccio, C., Pignataro, G. and Rizzo I.	Is competition able to counteract the inefficiency of corruption? The case of Italian public Works	2018	Italy	Quantitative (Data envelopment analysis)	More competitive bidding may exaggerate the negative effects of existing corruption on the efficiency of contract execution.	Largely Negative
Goncharov, I. and Caspar, P.	Does reporting transparency affect industry coordination? Evidence from the duration of international cartels	2016	Europe	Quantitative (Regression)	Disclosing contracting information decreases cartel duration.	Largely Positive

Harris Rimmer, S.	Gender-smart procurement policies for driving change	2017	Chile, Europe	Quantitative (Observational)	The share of women participating in the public procurement system in Chile reached 36.5% in 2016 thanks to the Procurement agency's action plan to enable women equal access to government procurement. [Citing EC 2013 :] Operation of preference schemes had a minimal effect on the economies of the regions where they had been applied, both in terms of the volume of contracts and economic growth	Mixed
Hrytsenko, Y.	Fight for life: how Ukraine is fixing medical procurement and serving patients better	2021	Ukraine	Quantitative (Observational)	Reduction in medicine prices by 40% following delegation of medicines procurement to international organizations. Savings of an additional 21.5% of the budget following the switch of medical procurement to Ukraine's Prozorro platform.	Largely Positive
Kenny, C.	Measuring the benefits of open contracting: Case studies on Mexico, Paraguay, and Slovakia	2010	Mexico, Paraguay, Slovakia	Quantitative (Regression)	Costs of a WB monitoring project were significantly higher than the direct economic benefits, but likely significantly lower when considering total economic cost of corruption.	Mixed
Kenny, C. and Chrisman, B.	Results through transparency: does publicity lead to better procurement?	2016	Global	Quantitative (Regression)	Increase in advertising leads to a significant increase in the level of competition.	Largely Positive
Knack, S., Biletska, N. and Kacker, K. Countries	Deterring kickbacks and encouraging entry in public procurement markets: evidence from firm surveys in 88 developing countries	2017	Global	Quantitative (Regression)	Firms are more likely to participate in public procurement markets in countries with more transparent procurement systems. More transparent systems also encourage more bidding by firms. Timely external audits are strongly associated with lower procurement-related kickbacks.	Largely Positive
Kochanova, A., Hasnain, Z. and Larson, B.	Does e-government improve government capacity? evidence from tax administration and public procurement	2016	Singapore	Quantitative (Difference-in differences)	Strong evidence of economic growth gains from implementing e-procurement.	Largely Positive

Kovalchuk, A., Kenny, C. and Snyder, M.	Examining the impact of e-procurement in Ukraine	2021	Ukraine	Quantitative (Regression)	Increased gap between estimated and actual prices (3.5 to 5.8%) and reduced time to procure goods by 5 to 6 days from introduction of e-procurement platform.	Largely Positive
Lagunes, P.	Guardians of accountability: A field experiment on corruption and inefficiency in local public works	2017	Peru	Quantitative (Randomized trial)	Pre-notified external monitoring did not affect the completion rate of public works but significantly reduced costs (51% less expensive).	Largely Positive
Lewis-Faupel, S., Neggers, Y., Olken, B. and Pande, R.	Can electronic procurement improve infrastructure provision? evidence from public works in India and Indonesia	2014	India, Indonesia	Quantitative (Quasi-experimental)	No statistically significant changes in prices but improvements in the quality of infrastructure from implementing e-procurement.	Mixed
Lichand G, Lopes M, Medeiros M.	Is corruption good for your health?	2014	Brazil	Quantitative (Difference-in differences)	Randomized audits greatly reduced occurrences of over-invoicing, off-the-record payments, and procurement manipulation in the health sector. However public spending fell and health indicators worsened as a result.	Mixed
Lopez Franco, E.	Evaluation of the Hivos open up contracting programme – engagement with marginalized groups	2020	Guatemala, Indonesia, Kenya, Malawi, Philippines, Tanzania	Qualitative (Case study, evaluation)	Tech-based mechanisms pose multiple access challenges for marginalized groups. Moving contracting processes online could inadvertently exclude those who rely on traditional means of communication. The costs of effectively engaging marginalized groups were often underestimated	Mixed
Majeed, R.	Promoting accountability, monitoring services: textbook procurement and delivery, the Philippines, 2002-2005	2013	Philippines	Quantitative (Observational)	Decrease in textbook prices by 50%, increase in the average shelf life of textbooks from two to four/five years and decrease in time to complete a textbook cycle (from bidding to delivery), by 50% following external monitoring of education procurement.	Largely Positive

Marion, J.	Are bid preferences benign? The effect of small business subsidies in highway procurement auctions	2007	USA	Quantitative (Regression)	Procurement costs are 3.8% higher on auctions using preferences (attributed to reduced participation by lower cost large firms)	Largely Negative
Nakabayashi, J.	Small business set-asides in procurement auctions: an empirical analysis	2013	Japan	Quantitative (Regression, counterfactual analysis)	Production costs increase due to SME preferences, but overall procurement costs decrease by 0.10%- 0.23%. An estimated 40% of SMEs would exit the procurement market if set-asides were removed.	Mixed
OECD	The Korean public procurement service, public governance review	2016	South Korea	Quantitative (Unclear)	Estimated savings of USD 8 billion per year and reduced time to process contracts from 30 to 2 hours, thanks to e-procurement implementation.	Largely Positive
Ohashi, H.	Effects of transparency in procurement practices on government expenditure: a case study of municipal public works	2009	Japan	Quantitative (Difference-in differences)	Estimated reductions in procurement cost of up to 8% thanks to improved transparency in the bidder qualification process.	Largely Positive
Olken, B.	Monitoring corruption: evidence from a field experiment in Indonesia	2007	Indonesia	Quantitative (Randomized trial)	Increasing grassroots participation in monitoring over 600 village road projects had little impact on costs but reduced missing wages. An increase of audit probability from 4% to 100% led to the reduction of missing infrastructure spending of 8%.	Mixed
Open Contracting Partnership	Diagnosis open: how open contracting is bringing down the cost of medicines in Chile	2021	Chile	Quantitative (Observational)	Increase of 1 tenderer reduces the price by approximately 5% on average per medicine.	Largely Positive
Open Contracting Partnership	'Everyone sees everything' overhauling Ukraine's corrupt contracting sector	2016	Ukraine	Quantitative (Observational)	Initial estimated savings of USD 233 million from introduction of e-procurement platform.	Largely Positive

Open Contracting Partnership	Learning insights: measuring results from open contracting in Ukraine	2017	Ukraine	Quantitative (Observational)	15% increase in the average number of bids per tender and a 45% increase in the average number of unique suppliers following the introduction of e-procurement platform.	Largely Positive
Open Contracting Partnership	Mythbusting confidentiality in open contracting	2018	Georgia, Ukraine	Quantitative (Observational)	Georgia and Ukraine's e-procurement systems developed for less than USD 1 million and less than USD 5 million respectively	Largely Positive
Open Contracting Partnership	Patients, experts, and openness: A powerful combination therapy for unaffordable medicines in Moldova	2021	Moldova	Quantitative (Observational)	Average savings of 15.4% on transactions worth around USD 60 million. Use of lower price generics led to overall savings of 19% on the 2020 HIV/AIDS program procurement budget.	Largely Positive
Open Contracting Partnership and UN Women	Empowering women through procurement and enabling inclusive growth	2021	Kenya	Quantitative (Observational)	Tenders reserved and awarded to women increased from USD 67 million in 2015/16 to USD 140 in 2018/19 and the number of tenders awarded to women increased by 100% from 2015 to 2019/20 following the introduction of preferential policies by the government	Largely Positive
Open Government Partnership	Anti-corruption initiatives: beneficial ownership, Open Government Partnership Global Report	2019	Slovakia	Qualitative (Observational)	Beneficial Ownership registry used to reveal that 190 of the listed beneficial owners are public officials (who might have a conflict of interest when it comes to procurements)	Largely Positive
Pavel, J., and Sičáková-Beblavá, E.	Do e-auctions really improve the efficiency of public procurement? the case of the Slovak municipalities	2013	Slovakia	Quantitative (Correlational)	2.4% price reduction thanks to electronic auctions.	Largely Positive
Rossi M. A., Vazquez, A. and Cruz Vieyra, J.	Information disclosure and the performance of public investment the case of Costa Rica	2020	Costa Rica	Quantitative (Randomized trial)	18% increase in financial progress and 8% physical progress of published public investment projects compared to unpublished projects.	Largely Positive

Pierri, G. Jarquín, M.J. and De Michele, R.	Transparency and gender: The impact of electronic purchasing on access to public bidding by women-led small and medium-sized enterprises	2021	Argentina	Quantitative (Difference-in differences)	Increased probability of bids awarded to woman-led business by between 2.48 and 4.22 percent thanks to electronic purchasing platforms.	Largely Positive
Salazar, C., Pane, J. and Fernández, R.	A duration analysis of public procurement processes	2020	Chile, Portugal	Quantitative (Observational)	Number of bidders and the number of items procured have a very small effect on contracting duration times	Largely Positive
Saussier, A. and Vidal, L.	The Cost of social public procurement for governments. The case of Paris City	2021	France	Quantitative (Observational)	Introducing social clauses in auctions does not incur additional costs	Largely Positive
Singer, M., Konstantinidis, G., Roubik, E. and Beffermann, E.	Does e-procurement save the state money?	2009	Chile	Quantitative (unclear)	Estimated price reductions of 2.65% and administrative cost savings of 0.28%-0.38% through e-procurement implementation.	Largely Positive
Šípoš, G., Samuek, S., and Martin, K.	Not in force until published online. What the radical transparency regime of public contracts achieved in Slovakia	2015	Slovakia	Quantitative (Observational)	16% drop in the share of tenders with a single bidder and an increase in the number of bidders from 1.6 firms to 3.7 companies following the introduction of mandatory online contract publication. Direct initial costs of mandatory contract publication up to EUR 100,000. Publication uncovered the purchase of identical CT scanners for prices that varied by more than 100%.	Largely Positive
Thillairajan A, Rajan S.C, Deep A, Gómez-Ibáñez J.A	Impact of changes in the transparency of infrastructure procurement and delivery on infrastructure access, costs, efficiency, price and quality: a systematic review of the evidence in developing countries	2012	Global	Quantitative (Systematic review)	Of a sample of 407 transparency intervention with an impact on infrastructure outcomes, 45% indicated a decrease in costs (4% indicated increased costs) and 41% indicated an increase in efficiency (13% indicated a reduction in efficiency).	Mixed

Transparency International Georgia	Simplified Procurement –corruption risks in non-competitive government contracts	2013	Georgia	Quantitative (Observational)	60% of donations disclosed by the ruling party came from owners, directors, and lawyers of companies that had received contracts without tenders, with the average donation estimated to be equivalent to 4% of the contract values.	Largely Positive
Van der Merwe, T.	Beneficial ownership registers: progress to date	2020	Czech Republic	Qualitative (Observational)	Beneficial Ownership register was used to uncover a clear conflict of interest in the Czech Republic involving Prime Minister Andrej Babiš.	Largely Positive
Van Schalkwyk, F. and Cañares, M.	Open government data for inclusive development	2018	Ghana, South Africa, Tanzania, Kenya, Paraguay, Uruguay, India, Burkina Faso, Cambodia, Nepal, Indonesia, Uganda	Qualitative (Case study)	No evidence that the open data initiatives resulted in greater inclusion. Some evidence of the “catalytic” power of open data to bring together diverse stakeholders with a common interest.	Mixed
Vissapragada, P.	Costing the ProZorro e-Procurement Program, Results for Development	2017	Ukraine	Quantitative (Observational)	ProZorro e-procurement platform cost EUR 4.69 million from implementation in 2017.	Largely Positive
Yakovlev, A., Bashina, A., and Demidova, O.	The effectiveness of simple homogeneous commodity procurement under rigid governmental regulation: the case of granulated sugar procurement in Russia	2014	Russia	Quantitative (Correlational)	Estimated price reduction of 6% per kilogram of sugar on average thanks to electronic auctions.	Largely Positive