

Construction and Public Procurement in Uganda

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1. Introduction

The construction sector represents the backbone of most developing economies, as it provides the foundation for infrastructure development, and it is therefore thought to act as a multiplier for all other economic sectors that rely on such infrastructure. Uganda is no exception, with conservative estimates from the Uganda Bureau of Statistics (UBOS 2018) suggesting the construction sector directly contributes to approximately 7 per cent of gross domestic product (GDP). The construction sector has been growing rapidly over the past decade, in contrast to the declining trend observed in some key traditional sectors such as manufacturing (see Colonnelli and Ntungire 2018). This growth in the construction sector is largely attributed to an accelerated rate of execution of public investment in energy and infrastructure. The upward trend in public investment is consistent with the country's strategy, as outlined in the National Vision 2040 and the second National Development Plan, to focus on building its capital stock, as a way to address Uganda's infrastructure deficits and to build production facilities to prepare for exploitation of the country's oil resource.

With respect to the growth of the natural resource sector, the importance of the construction sector is self-evident, more so with the recent discovery of an estimated 3.5 billion barrel oil reservoir in Uganda's western and north-western Albertine Graben which has attracted considerable investor attention and signals strong potential for Uganda's previously nascent extractive industry to transform livelihoods and raise the productivity of its largely agrarian-based economy. Estimates from the Petroleum Authority of Uganda (2018) put the value of total investments that will be made over the next three to five years, as Uganda transitions to an oil-producing country, at over US\$20 billion. Expectedly, a key portion of these planned investments will involve the construction sector, including the construction of an oil refinery (US\$4.5 billion), the construction of a 1,445-km East African crude oil export pipeline to the port of Tonga in Tanzania (US\$3.55 billion), the construction of a new international airport in Kabaale,

Hoima District, and the construction of regional road networks (US\$1 billion). Despite the promising prospects, the construction sector faces several bottlenecks, and the risks of failing to successfully convert investment opportunities into new job creation and national productivity growth are high. These new opportunities and challenges raise several questions: how much of the increased economic activity will be passed to the domestic private sector? Will these opportunities motivate efficiency—and transparency—enhancing regulatory changes? Will the influx of foreign capital increase or limit competition in the sector? Would corruption and inefficiency in public procurement still play a major role as a barrier to industry development?

These questions are especially important in light of the many challenges that have limited sectoral growth among construction firms and other stakeholders in their supply chains. These challenges range from difficulties in accessing finance to the endemic corruption and limited competition in public procurement, from the challenges of local firm capacity development to the information asymmetries about market prices and subcontractors' quality, and the list goes on. We aim to shed light on these issues in various ways, acknowledging that these challenges are difficult to tackle from a policy perspective, but that several incremental steps could be taken, and that Uganda is on an upward and promising trend.

We approach this study starting from the assumption that data are key to enlighten the policy debate. Unfortunately, the construction sector is notoriously opaque, and data on construction projects for most sub-Saharan countries tend to be limited only to a subset of the very largest ones from international donors. Nevertheless, we are able to provide novel quantitative evidence from a unique database on the universe of public procurement contracts, which allows us to study the market structure and several issues that are specific to the construction sector. The emphasis in this chapter is therefore on the interaction between construction firms and government spending. We further complement the analysis with an original survey of more than 600 construction firms, and with a number of focus groups and structured interviews conducted with several public- and private-sector organizations and officials.¹

The chapter is organized as follows. First, we provide an overview of the construction sector, and we illustrate its market structure using the micro-data on procurement contracts and firm-level surveys. Second, we discuss the basics of the regulatory framework, with a focus on public procurement and the primary stakeholders. Third, we argue about the importance of specific challenges to the growth of the sector and their relationships with policy. We then conclude.

¹ Unless otherwise specified, all statistics in this chapter refer to authors' calculations based on the original administrative from the Procurement and Disposal of Public Assets Authority and survey data collected.

2. Overview and market structure of the construction sector

The UBOS defines the construction sector as covering activities that include ‘construction of buildings, civil engineering and specialized construction activities’, with examples of the latter being ‘plumbing, heat and air conditioning installations, plastering and glazing, activities related to clearing of building sites, demolition of wreckage of buildings and repair of buildings’ (UBOS 2010–11).

According to data from the latest Census of Business Establishments, collected in 2010–11 by UBOS, there are 458,106 businesses in the country, of which only 653 (0.14 per cent) are in construction (see UBOS 2010–11). However, this number may vastly underestimate the importance of construction. First, when looking at the employment share, construction accounts for 1.3 per cent of all employment. Second, construction tends to be characterized by firms that mostly operate in specific but constantly changing construction sites, rather than their headquarters, which makes them less likely to be identified and to respond to census-like surveys. A better estimate is the contribution of the construction sector to national GDP, which saw the sector account for between 7 per cent (Colonnelli and Ntungire 2018) and 13 per cent of GDP according to UBOS (2018), where the latter considers a broader definition of the construction supply chain. Furthermore, government contracts involving construction account for 57 per cent of the total value of public procurement, or a staggering total of 8,451 billion Ugandan shilling (UGX), during the period 2010–15.

Lack of micro-data on both the demand and the supply side of the construction sector makes it difficult to provide a comprehensive picture of this market, especially from a time-series perspective.² Additionally, both demand and supply sides of the construction sector are extremely complex, with several key stakeholders involved.

Fortunately, Uganda’s primary public procurement regulatory agency, namely the Public Procurement and Disposal of Public Assets Authority (PPDA), collects rich administrative data on all government contracts. The data are directly obtained from all central and local government agencies through a compulsory mix of paper document submissions and the completion of online data systems, which are regularly checked for accuracy by PPDA officials.³ We partner with PPDA to fully digitize and harmonize these datasets, which gives us the possibility to analyse, to the best of our knowledge, the most comprehensive dataset to date on public procurement for an African country. In sub-section 2.1 we focus

² The last two full Censuses of Business Establishments took place in 2001–2 and 2010–11, with a partial update of the dataset in 2006–7.

³ Until 2015, the online system was named Procurement Performance Measurement System. Starting in 2015, the system was vastly changed and streamlined, and is currently named Government Procurement Portal.

on such new data to provide a deeper overview of the demand side for construction sector services.

Additionally, in 2016, we conducted an original survey of 664 construction sector firms, by means of face-to-face ninety-minute surveys of local owners and managers. These firms were identified as a stratified sample of firms that have ever done business with government agencies in 2014–15.⁴ The surveys include sections on basic business and owner/manager details, management practices, employment composition, supply chain linkages, expectations, and the importance of various challenges to doing business in the sector. In sub-section 2.2 we focus on these novel surveys to shed more light on the supply side of the construction sector.

Naturally, all datasets have a specific focus, and ours is biased towards the relationships between construction and public procurement. This caveat should be kept in mind, because we cannot go into details of specific sub-sectors that are less dependent on government spending, such as residential construction, where households and other private-sector firms play the major role as clients. Similarly, we are limited in our analysis of subcontracting among firms, as usually these data are subject to less strict disclosure and reporting requirements. Nevertheless, what is unquestionable is that the government plays a central role in the Uganda construction sector, as the largest projects are fully or partially run by government agencies, with local firms reporting that government contracts regularly account for more than 70 per cent of their total volume of business. Importantly, public procurement plays the leading role in construction sector activities not only in Uganda, but in all other East African countries as well.

2.1 Demand side: the role of government contracts

A total of 221 public bodies, or procurement and disposal entities (PDEs), have engaged in public procurement activity in the period 2010–15.⁵ Of these, 143 PDEs (65 per cent) have contracted at least one construction sector firm, which is the focus of the analysis sample used in the text. A further listing of the top twenty-five PDEs by number of construction contracts, shows see the dominant role played by the Uganda National Roads Authority (UNRA) and the National Water & Sewerage Corporation (NWSC);⁶ however, local governments also clearly play an important role for the dispersion of economic activity across geographical regions.

⁴ For more information on the sampling frame and other survey details, please contact the authors.

⁵ All our analysis in this sub-section refers to the period 2010–15, and all numbers are expressed in 2015 Ugandan shilling, unless we specify otherwise.

⁶ See Colonnelli and Ntungire (2018).

We further disaggregate the importance of these demand-side agents in (Colonnelli and Ntungire 2018), where we report the splits of PDEs into central versus local governments, by region, and by type of government agency.⁷ Not surprisingly, we find that while there are more local (eighty-eight) than central (fifty-five) PDEs, the latter account for 47 per cent of all contracts, and for 94.5 per cent in terms of the total value of contracts. This is informative of the highly skewed distribution of public buyers in the market, which is value-wise dominated by a few large government agencies engaging in extremely high-value contracts with construction firms. In terms of regional dispersion, we see that the majority of PDEs (eighty-four) are located in the central region, which is also the area with the dominant PDEs (such as UNRA), thus accounting for the majority of contracts (57.6 per cent) and almost the entirety of contract value (94.3 per cent). On the other hand, the PDEs in the northern, eastern, and western regions account for 16.4, 17.1, and 8.9 per cent of the contracts, and 2.4, 2.0, and 1.3 per cent of contract values, respectively. Finally, when looking at the classification by PDE type, we find that statutory bodies (such as UNRA, Uganda Revenue Authority, National Agricultural Research Organization, among others) play a crucial role, as they account for 21.5 per cent of the contracts and 76.4 per cent of contract values. Most small and medium contracts are instead contracted to firms by the local districts, which cover 46.3 per cent of all contracts but only 6.2 per cent of the total value.

Moving to the time-series dimension of the data, we can observe the evolution of public procurement activity over time (see Figure 3, Colonnelli and Ntungire 2018). We observe that while the number of active PDEs playing the role of buyers of construction firms' services has been increasing since 2010, reaching a peak of 121 PDEs engaging in at least one public procurement contract in 2015, the total number and value of contracts show a more nuanced pattern. This is true both when looking at the total number of contracts and total contract values.

To conclude the depiction of the demand side for public procurement, we report various summary statistics on construction contracts (see Colonnelli and Ntungire 2018). First of all, most construction contracts are labelled as 'macro' (a total of 11,791, or 83.6 per cent); that is, contracts that broadly require higher levels of documentation, stricter regulatory requirements, and minimum contract sizes. In comparison, only 28.2 per cent of non-construction contracts are classified as 'macro' across the other sectors, a clear indication of the importance of government contracts for firms in the construction industry. The largest construction procurement contract in the data is a contract of UGX315 billion, while the median macro contract is of UGX300 million; we also observe a high level of dispersion in contract value, indicative of the dominant role played by large

⁷ See Colonnelli and Ntungire (2018).

outliers for aggregate economic dynamics. In terms of sources of financing for construction contracts, we find that the vast majority of contracts (10,118 out of 14,110, or 72 per cent) are funded by the central government, while a smaller set is funded by the specific PDE (1,805), and only 560 contracts have been funded by international donors. However, the donor-funded contracts are the largest, with a median of UGX61 million and a mean of UGX2.1 billion, compared with a mean of UGX32.7 million and a median of UGX0.7 billion for central-government-funded contracts, and UGX18.5 million and UGX0.2 billion for self-funded contracts. We finally observe the distribution of contracts by allocation method: only 32.1 per cent of contracts are based on fully competitive procurement allocation methods (such as open domestic or international bidding), while 23.5 per cent require a request for quotations, 6.5 per cent follow a direct procurement method, and 37.9 per cent are allocated through various 'restricted' methods, with a number of them requiring pre-selection by the Evaluation Committee from a small set of firms, as discussed later. While the primary determinant of the contract allocation method is the size of a contract, as we can see from the summary statistics, these data also indicate that there is considerable discretion involved in public procurement, an important topic we return to in later sections.

2.2 Supply side: firm-level evidence

A primary challenge in studying the construction sector in developing countries is the paucity of comprehensive data sources on the firms operating in this sector. We conduct a novel survey of 664 firms operating in the construction sector in Uganda, interviewing firm owners with the goal of collecting information on their firm balance sheet, management and personnel structure, experience in doing business with the government, and self-reported challenges in operating their business.

The firms entering the sample are geographically dispersed, with 37 per cent firms located in the central region of the country, 31 per cent located in the eastern region, 22 per cent in the northern region, and 10 per cent in the western region (see Figure 4, Colonnelli and Ntungire 2018). The firms are relatively young, with 65 per cent of them having started operations after 2004 and only 10 per cent of firms founded before 2000.

Almost all firms (94 per cent) are male-owned and all but six owners were born in Uganda. The average age of the firm owner is forty-one years, with about 10 per cent of firms having an owner younger than thirty years. Interestingly, the majority of owners (62 per cent) also own or run an additional business.

Looking at the labour force characteristics of firms we see that the average firm has about ten full-time and fifteen part-time employees, while the median is five employees (for both variables)—a result of the fact that the distribution of these

variables is highly right-skewed, with a right tail of very large firms (see Table 3, Colonnelli and Ntungire 2018). The surveyed firms are highly reliant on the employment of casual employees, with the median firm employing sixteen casual workers over the month before the survey was conducted, with an average of twenty-six workers. On average, firms have about two people as managers. The median firm does not employ any foreign workers, although a small number of firms are heavily reliant on foreign workforce.

We also analyse key balance sheet variables (see Colonnelli and Ntungire 2018: Table 4) and find sizeable variation in profits for the past twelve months as well as in the number of contracts that the firms currently have. The median firm had about US\$2,300 of profits in the last year, while the overall average profit was about US\$13,000. The breakdown of business costs highlight that firms' greatest expenses are on labour costs, costs to buy stock and inputs in production, and the costs of renting or buying equipment.

The typical firm currently has only one contract. Importantly, as is evident from the data (see Colonnelli and Ntungire 2018: Figure 5), there is large variation in the share of business revenue that typically comes from procurement: we see a bimodal distribution, with about 28 per cent of firms that usually have close to zero reliance on government contracts, and about 42 per cent of firms that are completely reliant on procurement as a source of business. Similarly, about 64 per cent of firms in the sample have more than half of the value of their contracts coming from the public sector.

The data⁸ also confirms the importance of the public sector as a major source of business for construction firms in Uganda, with the average firm having less than one private buyer and 2.7 different public-sector bodies, with which they do business. The sector also seems highly concentrated, as the self-reported average number of competitors of a firm is three. Similarly, a firm does not typically obtain inputs and supplies from a large number of suppliers. Interestingly, the data further reveals that on average, a large share of these firms' production is outsourced or subcontracted (close to 20 per cent). This is relevant in the context of procurement, as the government may find it more difficult to monitor execution and quality of work in the presence of complex supply chains.

When it comes to the perceived challenges in doing business, firms believe that a large number of competitors engage in unfair business practices, like avoiding or underreporting taxes, selling below market prices, avoiding labour regulations and health and safety regulations, and engaging in collusion. Importantly, the average firm owner believes that 71 per cent of competitors engage in corrupt or unfair practices to win contracts (see Colonnelli and Ntungire 2018: Table 7). Even among the local firms with which the owners report doing business, 40 per cent on

⁸ See Colonnelli and Ntungire (2018: Table 5).

average are believed to be corrupt, while the share is much lower for international firms. A good reputation is thought to be an important determinant of the likelihood of doing business with a firm for all owners, and 70 per cent of firms state they have some internal control mechanisms to monitor corruption cases inside their firm. Finally, while firm owners seem to be very concerned about corruption cases in their sector, only 40 per cent of them believe that court enforcement works well in Uganda, and the share decreases to 22 per cent when it comes explicitly to corruption cases.

3. Regulatory framework and main stakeholders

In this section, we discuss the regulatory framework of the construction sector and the role of public procurement in Uganda, with a focus on the main stakeholders in both the public and private sector. The information in this section is mostly based on the regulations and guidelines contained in the Public Procurement and Disposal of Public Assets Act 2003 and the subsequent 2014 regulations, as well as on various other guidelines published online by the regulatory agencies discussed in the following sections. We refer the readers to the original text for more details and specific exceptions.

3.1 Public procurement and the central role of PPDA

Part II, Section 5 of the Public Procurement and Disposal of Public Assets Act 2003 (henceforth the 'Act') established an autonomous regulatory body called the Public Procurement and Disposal of Public Assets Authority (henceforth, the 'Authority' or PPDA) (see Public Procurement and Disposal of Public Assets Authority 2003). It can be argued that the Authority represents the key player in the construction sector in Uganda, as public procurement plays such a central role as discussed in section 2. The Authority is also seen as the main anti-corruption and transparency agency in the country. The objectives of the Authority can be summarized as follows:

- set the standards and practices for public procurement and disposal systems
- monitor and ensure compliance to these standards and practices
- advise the government and public entities involved in procurement on procurement and disposal policies
- build procurement and disposal capacity in Uganda (Part II, Section 6 of the Act).

Part II, Section 7 of the Act outlines the functions of the Authority. Besides policy functions (such as, for example, advising government and public entities on best practices and capacity building) and regulatory ones (which include, among others, issuing guidelines and regulations, investigating breaches of the law, and carrying out performance audits of government contracts and public bodies' performance), PPDA also collects data on management functions and the allocation of government contracts. Some of the rich data that PPDA manages were illustrated in section 2; additionally, it oversees the maintenance of data-bases of providers and of online systems for publishing notices of procurement opportunities and awards.

As for the organizational structure, the Authority is governed by a board of directors appointed by the minister of finance, which consists of between six and eight members, including the executive director of the Authority, who is an *ex officio* member and who does not vote, and the secretary to the Treasury or a person nominated by him or her (Part II, Section 11 of the Act). The board appoints the executive director, who is responsible for the management and operations of the Authority, as well as for the management of its funds and property, and is in charge of the officers and staff of the Authority (Part II, Section 17 of the Act). Finally, officers and staff operate in six different departments: Executive Director and Corporate Office, Procurement Audit and Investigations, Finance and Administration, Internal Audit, Legal and Advisory Services, and Compliance and Training and Capacity Building.

3.2 Doing business with the government

The Public Procurement and Disposal of Public Assets Act of 2003 provides rules governing all public procurement (defined as any procurement that is funded by public funds and by funds generated by a PDE) and public disposal activities (defined as the disposal of government assets). Furthermore, eleven regulations, which were drafted by the Authority in 2014, provide a comprehensive set of rules governing all procurement and disposal activities. In this sub-section, we illustrate the main components of these regulations.

3.2.1 Choice of procurement method

The first step in the process for the award of a procurement contract is the selection of the procurement method. Smaller contracts qualify for micro procurement, which is subject to specific (simplified) regulations. Specifically, for the case of construction projects, this method can only be used for contracts with a value lower than UGX10 million. The micro procurement requires no written disclosure or bid; the only requirement is that the PDE evaluates a minimum of three quotations from different providers.

Additionally, as briefly seen in section 2, there are various other procurement methods, each subject to different regulations:

- open bidding (domestic and international)
- restrictive bidding (domestic and international)
- request for quotations and proposals
- direct procurement.

The choice of which method to use depends on guidelines set forth in PPDA Regulation 6 and, for each contract, PDEs must detail the reasons that justify the use of a specific method. In the following paragraphs, we describe the details of each method. Importantly, while simplified compared with the specific details in the law, it is evident that a considerable degree of discretion is left in the hands of public officials, as will be discussed in more details in section 4.

Open bidding (domestic and international): This is the most transparent and preferred method, since it involves maximum competition. The PDE must publish a bid notice offering the opportunity to participate in the auction to all interested bidders. However, a request can be made to the Contracts Committee (discussed later in this section) to use a pre-qualification screening to obtain a shortlist of potential bidders. This is allowed if the project is highly complex, if the detailed nature of the evaluation implies that evaluating several complex bids would require a significant amount of time, or when the costs of preparing a detailed bid would strongly discourage competition. This method should be used when the contract value for the construction project exceeds UGX500 million. The minimum bidding period is thirty days for international bidding (open also to foreign providers) and twenty days for domestic bidding (open only to providers from Uganda).

Restricted bidding (domestic and international): This method is similar to open bidding, except that there is no publication of a bid notice. Instead, the invitation to bid is restricted to a limited number of potential providers included in a shortlist. Shortlisted firms can come from the Register of Providers (a database maintained by PPDA with information on firms interested in doing business with the government), officials' market knowledge, previous experience of providers, or a previous pre-qualification.

For construction contracts, this method can be used when the value of the contract lies between UGX200 million and UGX500 million. Alternatively, the method can be used if there is a limited number of potential providers, or in cases of emergency when there is insufficient time for an open bidding procedure.

A minimum of three bidders must be invited to bid or, in case the justification for using a restricted bidding method is the limited number of potential providers, all available potential providers. The minimum bidding period is twenty days for international bidding (open also to foreign providers) and twelve for domestic bidding (open only to local providers).

Request for quotations and proposals: This is a simplified method compared with open and restricted bidding, as it requires quicker and simpler procedures and documentation. Similar to restricted bidding, the invitation to bid is restricted to a limited number of shortlisted bidders, which can come from the Register of Providers, officials' market knowledge, or previous experience of providers.

This method can be used when the construction project's value lies between UGX10 million and UGX200 million. Alternatively, the method can be used in cases of emergency when there is insufficient time to use other, more competitive methods. A minimum of three bids must be obtained from potential providers.

Direct procurement: This method can only be used in an emergency situation, when there is insufficient time to use any other procedure, or when the construction project can only be carried out by one single provider or, in some instances specified by the regulations, when an original contract needs to be extended. This method can be used for any contract value, provided that the PDE justifies its use in light of the above conditions.

3.2.2 Evaluation phase

The evaluation criteria must be clearly specified in the solicitation documents, together with a statement of requirements, which clearly defines the quantities and specifications of what is to be purchased. Evaluations must be conducted by a team of at least three staff, who are approved by the Contracts Committee. All evaluations must be based on criteria pre-specified in the solicitation documents. There are three stages of evaluation:

1. *Preliminary examination:* At this stage, unsuitable bidders and incorrect bids are eliminated. Unsuitable bidders are companies that are not registered or that are not compliant with the legal requirements listed in the Public Procurement and Disposal of Public Assets Act. Incorrect bids are mostly those that are not accompanied by a bid security and those where not all submission requirements are correctly followed.
2. *Detailed evaluation:* At this stage, the technical quality of the bids is assessed. Depending on which of the five evaluation methodologies (described in stage 3) is used, this is done either by comparing the documentation provided in the bid with the specifications in the solicitation documents or by awarding merit points to each bid.
3. *Financial comparison:* At this stage, the best evaluated bidder is determined, following one of five evaluation methodologies, which must be specified *ex ante* in the tender or solicitation documents, and which are reviewed by the Contracts Committee to verify they are well suited for each given contract:
 - a) *Quality- and cost-based selection:* This evaluation methodology considers both the technical quality of the bid and its cost. This is done in two steps. First, the technical quality of bids is evaluated, assigning merit

points to each bid and eliminating bids below a certain predetermined score. Then, the remaining bids are awarded points based on cost. The best evaluated bid is the one with the highest weighted technical and cost scores (with weights predetermined in advance).

- b) Quality-based selection: This evaluation methodology considers only the technical quality of the bid, by assigning merit points that determine the best evaluated bidder.
- c) Fixed-budget selection: This evaluation methodology considers the technical quality of the bid, but ensures that the cost of the bid is within a pre-specified budget. For bids within this budget, merit points are awarded to determine the best evaluated bidder.
- d) Least-cost selection: This evaluation methodology considers the cost of the bids, provided that the technical quality of the bids meets the minimum technical standard required. In order to determine which bids meet the standard, merit points are assigned to the technical quality of each bid, and bids below the minimum standard are eliminated. For bids that meet this standard, the best evaluated bidder is the least costly one.
- e) Technical compliance selection: A methodology similar to the least-cost selection one, except that in the first step there is a simpler pass/fail decision to determine whether a bid meets the technical standards, instead of the assignment of merit points.

3.3 Stakeholders in the construction sector

3.3.1 Main stakeholders in public procurement

The process of procuring government contracts involves several agencies, units within agencies, and a number of specific public officials. In this section, we list the main such stakeholders, their functions, and how they are organized.

PDEs: All procurement and disposal activities are carried out by procurement and disposal entities, or PDEs, as also extensively discussed in Section 2. A PDE refers to a ministry or department of the government, a local government, or any other body established by the government or intended to carry out public functions (such as a public university or a public hospital).

Entities must plan their procurements at the beginning of each fiscal year, with the goal of aggregating requirements into larger contracts, gaining economies of scale, and avoiding emergency procurement whenever possible.

Each PDE is composed of an accounting officer, a contracts committee, a procurement and disposal unit (PDU), a user department, and an evaluation committee, which must act independently and not interfere unduly in the operations of others. Next, we discuss these other stakeholders.

Accounting officer: The accounting officer is the person with the overall responsibility for procurement and disposal within the PDE, although s/he is not

involved in detailed procurement or disposal work or in making official contract allocation decisions. S/he appoints members of the contracts committee and staff in the PDU.

Before the procurement process starts, the accounting officer commits funds to specific contracts; s/he undertakes assessments of market prices and the unit costs for each construction project and s/he advertises bid opportunities. Additionally, s/he authorizes payments to providers, signs contracts, communicates decisions to successful bidders, and ensures that contracts are implemented in accordance with the award. In emergency situations, the accounting officer can sign contracts without the approval of the contracts committee. S/he is also in charge of investigating complaints from bidders and of submitting the procurement plans to the secretary of the Treasury and to PPDA at the beginning of each fiscal year. In sum, accounting officers hold a considerable share of power in the procurement process.

Contracts committee: The contracts committee consists of up to five members: a chairperson, a secretary, and a maximum of three other members (including a lawyer). Neither the accounting officer nor a member of the PDU may be members of the contracts committee. Its main responsibility is to ensure that procurement and disposal activities are conducted in compliance with the Act and additional regulations. This is done by approving or rejecting recommendations from the PDU. Specifically, the contracts committee has the power to authorize the choice of procurement and disposal procedures, evaluate the contract documentation through various evaluation reports, and make amendment to awarded contracts. Finally, and importantly, it approves the evaluation committee.

Procurement and disposal unit (PDU): The PDU manages all procurement and disposal activities of the PDE (except adjudication of awards), working in conjunction with the user department and seeking approval of the contracts committee where appropriate.

In particular, the PDU plans the procurement and disposal activities of the PDE, recommends the procedures to follow, prepares statements of requirements, prepares and issues the bid documents and the contract documents, and maintains a list of providers in archive records.

In addition, it recommends the members of the Evaluation Committee.

Its size and structure and the number and grades of staff are determined by the procurement workload of the PDE.

User department: The user department works under the PDU. Its responsibilities include the preparation of the annual procurement plan, providing technical inputs to the procurement process, and managing contracts once placed.

Evaluation committee: Members of the evaluation committee conduct all evaluations. The members are recommended by the PDU and approved by the contracts committee. The committee has a minimum of three members, and must

include at least one person representing the user department and a member of the PDU. Some members may be external, if the required level of skills and seniority are not available within the PDE.

3.3.2 Additional stakeholders

Several other private- and public-sector stakeholders play an important role for the functioning of the construction sector. The following is a list of the main such stakeholders:

- *Uganda National Association of Building and Civil Engineering Contractors (UNABCEC)*: This is a professional association that gathers local civil work firms. It advocates and lobbies for policy change, with a special interest in improving the landscape for domestic construction firms engaging in public procurement contracts. UNABCEC has more than 300 members, who benefit through access to data, newsletters, and other activities such as networking events among firms and public officials.
- *Inspectorate of Government (IGG)*: This is a government agency that plays a fundamental role in the enforcement of regulations and in ensuring transparency in the interaction between the private and the public sector. It works in close collaboration with PPDA, and its role in ensuring efficient public procurement is clearly summarized in its mission to ‘promote good governance, accountability and the rule of law in public office’ (see Inspectorate of Government 2018). Together with PPDA, the IGG is among the primary anti-corruption agents in the country.
- *PPDA Appeals Tribunal*: It reviews PPDA decisions when a public procurement bidder is aggrieved by a decision made by the PPDA, when a bidder alleges that PPDA has a conflict of interest, or when a PDE or any person’s rights are adversely affected by a decision made by the PPDA.
- *Africa Freedom of Information Centre (AFIC)*: This is a non-governmental agency with a primary goal of improving transparency in public procurement, so as to increase value for money in government spending. It plays an important role in anti-corruption monitoring and is at the forefront of the open contracting advocacy, operating across multiple regions in sub-Saharan Africa.
- *Uganda Revenue Authority (URA)*: This is a government agency responsible for tax collection and compliance among both firms and individuals. It plays an important role for construction firms, as the reliance on government contracts for firms in this sector makes them especially relevant targets of tax audits.
- *Uganda National Bureau of Standards (UNBS)*: While not its primary function, it stipulates standards for materials and techniques used in construction, therefore playing a crucial role for construction sector firms.

- *Uganda Bureau of Statistics (UBOS)*: This is the government agency responsible for the Census of Business Establishments, which aims to provide a comprehensive picture of private-sector activity across all Uganda regions and sectors.
- *Architect Registration Board*: It controls the registration and certification of architects.
- *Uganda Institute of Quantity Surveyors*: It regulates the professional practices and registrations of quantity surveyors in Uganda.
- *Uganda Institute of Professional Engineers*: It regulates the certification and practices of professional engineers as well as all matters concerning civil engineering. Set up by the parliament, it has the goal of streamlining qualifications of engineers and practices in the country.
- *Engineers Registration Board*: This is a statutory body with a mission to regulate and control engineers and their profession.

4. Challenges to sector development and efficiency

As for every other emerging economy in the world, there are several frictions to the functioning of private-sector activities in Uganda. The construction sector is an especially challenging one in this regard, as it possesses several backward and forward linkages with other sectors and is strongly interconnected with the rest of the economy. For example, high levels of policy uncertainty and unplanned government expenditure limit growth of the sector, especially given the fact that it faces significant sunk costs and large, often irreversible, firm investment in fixed capital. Similarly, macro-economic fluctuations and currency devaluations can be a drag on construction firms who are typically dependent on bank financing. While these are all first-order important issues, they are also extremely hard to tackle from a policy perspective. Therefore, in this section we focus on specific key issues we think act as barriers to firm and industry development in the Ugandan construction sector, and where incremental policy improvements may be easier to achieve. Furthermore, our emphasis is on local small and medium firms, which are in a weaker bargaining position and hence stand the most to gain from efficiency-enhancing reforms.

4.1 Corruption and inefficiency in public procurement

Corruption is often seen as the leading friction to doing business (Mauro 1995), with costs being highest for government-dependent firms in developing countries. Recent evidence further shows that the negative link between corruption and economic growth is arguably causal (Colonnelli and Prem 2018). The reasons

why sectors like construction are so prone to corruption are several. Obviously, as is evident from our previous discussion, construction is the economic sector most dependent on public procurement. This, coupled with typically sizeable average contracts, gives public officials and politicians many lucrative opportunities to illegally extract rent from the private sector. These concerns are magnified when we consider that the government plays not only the role of client but also that of regulator. Another reason is that, by its very nature, construction costs are difficult to measure, as construction involves complex non-standard processes with high degrees of asymmetric information between buyers and sellers (Kenny 2007). Relatedly, output quality is even harder to observe. For example, the quality of a billion-dollar road may only be accurately assessed years after the contract has been paid out, when potholes and other damages due to sub-par quality construction materials and processes become apparent to the public. Finally, construction also involves an intricate supply chain, multiple inter-sector linkages, and a number of different private-sector agents, which lead to difficulties for regulators to track illegal activity and take proper enforcement actions.

Anecdotal evidence on corruption cases in construction abound. As a large-scale example, a few years ago a special government commission was set up to study the misuse of funds by the UNRA, after several scandals in the construction of roads by international firms were uncovered. The commission estimated that over a period of approximately seven years, an astonishing UGX4 trillion had likely been misappropriated. Furthermore, in a recent report, the IGG uncovered (through investigations and complaints) the presence of 1,399 cases of abuse of public office, which mostly involved corruption and embezzlement in the public procurement process (see Kahungu 2018).

We also report new data we digitized from all PPDA anti-corruption and performance audits they performed during the period 2010–16 (see Colonnelli and Ntungire 2018: Figure 6). As the data shows, only 37 per cent (less than half) of the audited procurement contracts were found to be fully satisfactory in their allocation and execution, with a significant chunk of them (26 per cent) qualified as ‘high risk’, namely subject to severe violations including fraud and corruption, among other irregularities. An additional piece of evidence comes from the suspension (or blacklisting) of 156 providers from participating in public procurement due to corruption violations verified after prosecutorial actions. Administrative data from PPDA also shows that about 20 per cent of blacklisted firms are still selected for government contracts during the suspension period.

Of course, corruption per se is not the sole problem in public procurement, as more benign forms of inefficiency are also widespread. Moreover, it is often difficult to distinguish between corruption and inefficiency, as many cases fall into the grey areas in between. For example, the administrative data from PPDA shows that a significant share of construction projects exceeds the original proposed costs or is completed with significant delays compared with expectations, or both.

While corruption may be a reason behind such efficiency-reducing renegotiations of contract terms, other explanations have simply to do with limited capacity on the government's or provider's side, who may have each been unable to accurately predict the project's difficulty. An additional example relates to the interpretation of discretionary procedures, where officials may simply lack the necessary skills to make the most efficient decisions. There is also a host of other cases of seemingly pure inefficiencies and red tape, such as the widely cited issue firms face in waiting for government payments for already executed contracts, which disrupts their cash flows and adversely impacts their credit repayment ability as well as relationships with finance providers.

When it comes to policy implications, it is crucial to aim for big picture changes aimed at addressing both corruption and inefficiency in the interactions between firms and government agencies. Anti-corruption and performance audits of the types performed by PPDA and mentioned earlier, for example, are a well-suited policy tool. However, due to budget limitations, these audits only cover a subset of the PDEs and a few thousand government contracts are audited every year. While there is not enough data to evaluate how successful they are in the Uganda context yet, such audits, especially if randomized, have been shown to be quite effective in other contexts (e.g. see Avis et al. 2017); providing more resources for such activities that combine capacity building with monitoring is likely a productive way forward.

Transparency is also of paramount importance for the construction sector. Indeed, one of the primary challenges firms face is that of obtaining timely and relevant information on available tenders. Such opacity in the disclosure of tender opportunities is therefore seen as a major limitation to competition, as only the largest and well-connected firms may end up bidding for a contract. While private and non-governmental agencies like UNABCEC and AFIC play an important role in trying to increase transparency and awareness among local firms, more efforts from the government are needed. The creation of the Government Procurement Portal in 2015, which provides timely, online information on all government procurement activities with the goal of achieving a full-fledged e-procurement system, is the right approach. However, many firms and stakeholders complain about the limited effectiveness of the current system, due to implementation shortcomings. Hence, newspapers and local associations still remain the prevalent source of information about tenders for small local firms, and competition remains limited. One of the reasons why implementing e-procurement has been challenging is that several public agencies lack the technology or the skills to do so. This indicates the need for the central government to increase efforts towards capacity building of the most remote and less-skilled agencies, which to date remain too sporadic. Transparency is also an issue on the government side, as our interviews show that officials are often unaware of sources of data they can use in the phase of bidders' screening for example. A

practical next step in this direction is that of improving the communication and information flows across public-sector agencies (like the URA and PPDA); such a policy offers great potential and likely relatively low costs, but is currently hindered by large amounts of red tape.

The issue of transparency is directly linked to regulation. As described in Section 3, procurement regulations leave an excessive amount of discretion in the hands of public officials, which can often find easy justifications for the use of non-competitive methods to allocate procurement contracts. We find evidence for this both in the data, where open bidding systems remain the exception rather than the rule, and through a number of qualitative field interviews. This is not surprising considering, for instance, the presence of vague statements in the key metrics of selection for pre-screened firms, such as the reliance on ‘officials’ market knowledge’ or the weight on a provider’s ‘previous experience’, without further details or directions. There are countless examples like this. The language of these regulations must then be tightened, and officials must be subject to more severe monitoring (and potentially more severe follow-up penalties) in cases in which they abuse such vague regulations for private gains. Regulation is often also discussed in relation to local capacity building, with a first-order example being that of schemes to help local firms compete with international ones. The two main such schemes are the preference scheme and the reservation scheme, which in sum attempt to subsidize local firms’ bids in open bidding auctions, and to prioritize specific local sectors and groups of small local firms.⁹ While these schemes are in place, the widespread view of the local construction sector is that enforcement of such schemes is currently largely lacking, due in part to the vague or non-existent regulations on follow-up activity in case of schemes’ violations. Regulation alone per se is, however, likely not sufficient to improve local firms’ abilities to compete, and there is uncertainty over the effectiveness of such local schemes (which some argue may even ultimately reduce competition and efficiency by disincentivizing large productive firms to participate in the sector). Other initiatives, such as enterprise development schemes and skills-matched internships, though long-term oriented, should also allow local firms to develop the necessary skills and to be able to attract the talent needed to compete with their international counterparts.

Finally, Uganda’s construction sector lacks the necessary regulatory framework to enforce compliance to standards and quality, which has led to a consistent low quality of skill and labour inputs and therefore low productivity of the sector.

⁹ For the sake of brevity, we refer the reader to the following guidelines and regulations for more information on such schemes: PPDA Act 2003, Sections 50(1), 50(2) (see Directorate of the First Parliamentary Counsel 2003); Local Governments (PPDA) Regulations 2006, Regulation 53 (see Public Procurement and Disposal of Public Assets Authority 2006); PPDA Guidelines on Reservation Schemes 2018 (see Public Procurement and Disposal of Public Assets Authority 2017); ‘Buy Uganda Build Uganda Policy 2014’ (see Ministry of Trade, Industry and Cooperatives 2014).

Currently, the mandate for quality assurance of the construction sector falls under the Construction Standards and Quality Assurance Department, Ministry of Works and Transport; however, for a more coordinated and comprehensive approach the government of Uganda should consider a national body or programme that would work closely with the existing private-sector structures (e.g. UNABCEC and the Uganda Institution of Professional Engineers) to enforce and reward quality.

4.2 Access to finance

The construction industry is a high-risk sector for financiers, especially in relation to the extractive sector, as it often requires significantly high fixed capital investments and incurs huge sunk costs. The lack of access to finance is especially acute for local construction firms whose ability to borrow is limited by rigidities in the domestic financial market and a lack of adequate collateral. A survey of local and foreign construction firms executing work on donor-financed road projects in Uganda found that the typical amount of credit obtained by a foreign construction firm was twenty times larger than that obtained by a local construction firm (Balimwezo 2009). This sharp contrast in access to financing for the domestic construction industry puts local firms at a disadvantage, restricting their ability to undertake new projects, recruit skilled labour, or even manage current projects. These issues are more and more salient to firms, as the influx of international firms, primarily from China, using considerable cheap credit from their original countries strongly limits national firms' competitiveness for the same contracts.

Currently, the lion's share of financing to the domestic construction sector in Uganda has been undertaken by commercial banks; but banks have mostly short-term liabilities and are therefore not well placed to hold long-term assets on their balance sheets, which further hinders borrowing especially for long-term construction projects. In addition, nominal and real interest rates are high (nominal interest rates have remained over 20 per cent for the past ten years), making it very costly for firms to borrow from the domestic market. Interviews with several construction sector firms reveal that most small and medium local firms therefore rely on money lenders (who charge a premium over the average market interest rates), as the flexibility they provide is essential for firms, and partly justifies the exorbitant associated costs. Other alternative sources of funding often include family and friends, while development finance institutions seem to have very limited traction in Uganda due to perceived excessive bureaucracy. All these challenges become particularly relevant for local firms tendering for public work contracts. To finance equipment and large contract tenders, and in the absence of access to credit, such companies often resort to their own

savings or hire used equipment from the local market, further undermining their competitiveness and quality of work produced.

A further hindrance to financing for small- and medium-sized construction firms is the bid security requirements to deal with government contracts, which are often too demanding for these firms. Firms argue that even if they are able to obtain the bid security from a bank, typical delays in dealing with government agencies make it too costly for them. On the one hand, while the bid security must be submitted before the evaluation phase, firms pay significant interest fees, which are magnified if the government delays the contract evaluation (which firms argue is typically the case, with delays taking up to several weeks or months). On the other hand, similar extra interest costs are incurred if the government delays the actual payments for work performed (which again firms argue is typically the case and consider these delayed payments to be the primary challenge in public procurement). All firms interviewed emphasized how strong a barrier to directly participating in public procurement and sector development the issue of bid security and delayed payments is.

Finding possible solutions for these access-to-finance challenges is no easy task, in Uganda or other emerging economies in the region. Here, we focus on one possible solution that can help bridge the financing gap for domestic contractors and that has had success in similar contexts, namely 'lease financing'. Financial leasing is a contractual arrangement that allows one party (the lessee) to use an asset owned by the leasing company (the lessor) in exchange for specified periodic payments (lease rentals). During the lease period, legal ownership of the asset is retained by the lessor. An advantage of this mode of financing is that the lessee need not provide collateral, provided s/he has sufficient cash flow from core operations to cover the lease rentals. While financial leasing was only introduced to the Ugandan financial market in 1994, the market has witnessed significant growth over the past decade with potential for rising demand. To date, eleven companies offer financial leasing as a product, of these only three are independent while the remaining eight are ring-fenced divisions of commercial banks. A key constraint to further growth of the sector, however, is a less-than-enabling policy environment: Uganda has no legislation that regulates the business and practice of leasing; while a bill has been submitted to the minister of finance, planning and economic development it is yet to be signed and there is no indication of the bill being signed soon. Moreover, the construction sector remains a less-favoured sector for this mode of financing compared with other economic sectors such as agriculture and transport, owing to several risks, foremost of which is the fact that, as already mentioned, construction contracts are usually dependent on untimely government disbursements that make regular lease payments difficult. Not surprisingly, the firms we interviewed were not optimistic about the current framework on lease financing, which remains as of now a largely unexplored financing avenue.

4.3 Marginal costs of construction

Addressing the bottlenecks to supply in the construction sector before the onset of investments associated with the transition to commercial oil production will be critical, as any constraints to supply may likely translate to higher marginal costs and prices, thereby reducing the physical output for a given amount of nominal investment.

There is some evidence that marginal costs of construction (particularly for public investments) are already rising in Uganda. Construction costs, particularly for civil works and non-residential buildings, have outpaced overall inflation significantly and appear to be accelerating (see Colonnelli and Ntungire 2018: Figure 8). More specifically, whereas prices for the construction sector as a whole fell by 0.4 per cent between December 2016 and December 2017, the prices for civil works rose by 3.1 per cent (reflecting a surge in public investment). To ensure that demand matches supply, the government needs a better understanding of local supplier capacity (e.g. through enterprise surveys) as well as a steady and reliable flow of information to suppliers on its upcoming investment plans.

5. Conclusion

In this work, we rely on administrative micro-data and new survey evidence, combined with structured interviews of local firms and both private- and public-sector organizations, to describe the role of the construction sector in Uganda. Construction is by many considered to be the central sector to focus on for countries like Uganda that aim to make efficient use of the recent wave of natural resource discoveries.

The emphasis of this analysis is on the interaction between government agencies and local firms, as public procurement plays the crucial role of main driver of industry growth. The data point to a market structure that is rather concentrated. On the one hand, a few government agencies are responsible for the vast majority of government procurement and the largest contracts. On the other, the supply side of the market sees the presence of a right tail of large firms accounting for most of the economic activity. Unsurprisingly, the largest firms tend to be the foreign ones. We then illustrate the regulatory framework for public procurement in Uganda, with a focus on the organizational structure of the supervisor agency, namely the PPDA. We also expand on various other players, in both the private and the public sector, that can be instrumental in the efficient development of the construction sector.

In section 4, we provide an in-depth analysis of some of the main challenges local construction firms face in Uganda. In particular, we discuss the role of corruption and inefficiency in public procurement as the leading issue to address.

Higher levels of transparency and more streamlined regulations are the way forward, and Uganda is on a positive trend, but there is a long road ahead. A second key channel is the frictions in accessing finance that local firms face, which we argue can be alleviated by regulatory changes more favourable to lease financing and related tools. We conclude by briefly discussing the importance of tracking construction costs and prices at such a time of increasing demand.

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