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DISCUSSION PAPER ON PUBLIC PROCUREMENT PERFORMANCE MEASURES

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The paper was prepared by the consultant Gian Luigi Albano, in cooperation with the OECD procurement team.

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NOTE FROM THE SECRETARIAT

To encourage countries to develop an evidence-based approach, the OECD has been a pioneer in estimating the size of procurement markets. In recent years the OECD has collected and updated information on procurement markets, actors and processes as part of Government at a Glance. The 2012 report to Council showed that although member countries increasingly collect basic data on procurement, few of them make a systematic analysis of this information to measure the performance of the procurement system. Also, evidence of the impact of procurement on public policy objectives such as SMEs development or sustainable development remains scarce.

To help shape future directions of this work on measuring procurement performance, this paper was developed by the consultant Gian Luigi Albano, in cooperation with the OECD procurement team¹. The paper aims to provide a framework for identifying a set of performance measures of a procurement system. It provides a first attempt to discuss what indicators could be relevant for measuring the performance of a procurement system, keeping in mind the possible difficulties in gathering this data. The second part of the paper explores how public procurement strategies can affect key dimensions of national competitiveness such as market size and innovation.

FOR ACTION:

Experts are invited to:

- Present existing performance measures or indicators in their country on the procurement system;
- Discuss what additional data could be useful to measure the performance of their procurement system;
- Shape directions for future work on data collection for developing benchmarks and indicators, including on the impact of procurement on competitiveness.

1 Comments were provided by Janos Bertok, Elodie Beth, Frédéric Genest and Despina Pachnou.

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INTRODUCTION

1. During the last two decades public procurement has undergone profound changes. Policy makers, academics and practitioners alike share the broad view that public procurement has evolved from a clerical signoff-ridden set of activities to a strategic tool to enhance efficiency in public organizations, to regulate markets and promote sustainable development.

2. Governments often base their reforms on the assumption that public procurement is an effective tool for pursuing a heterogeneous array of socially relevant objectives. Often, unfortunately, policy debates tend to focus on how to expand the list of objectives rather than to assess the potential compatibility of those agreed objectives. A major problem, however, has to be solved even before getting to the compatibility issue, namely how to measure the effectiveness of procurement choices for each single objective. The difficulty is such that most discussions about the outcomes of public procurement strategies boil down to estimating the value of savings from competitive procedures and/or from streamlining processes by using electronic means, although it far from being clear that commonly shared methodology on how to compute savings has been reached.

3. This paper has two main objectives. In part I, we shall provide the main logic underlying the construction of a set of performance measures of a procurement system, taking also into account some indirect effects of procurement activities on the welfare of subjects who are not direct parties to a public contract or even on the whole society. In part II, we shall tackle an arguably less obvious topic, namely how public procurement strategies can affect national competitiveness.

4. All the indicators set forth in the paper might be applied in principle to a single public organization as well as to a wider public subject such a specific part of the public sector (say, the procurement system in the health sector), a region and even the whole national procurement system. Nonetheless two major difficulties are to be carefully taken into account when applying the set of indicators simultaneously to a multitude of public organizations: *i*) the availability and the quality of data; and *ii*) the recourse to descriptive statistics as average or median values that would inevitably smooth out some heterogeneity among different public organizations. Therefore the paper also signals where it is expected that few OECD countries are collecting this information².

2 Those indicators labelled with an asterisk (“*”) are to be considered the most difficult to use in terms of the quality/quantity of information they require, thus they ought to be applied in very advanced procurement systems.

PART I

1. The logic of the performance indicators

5. What dimensions of public procurement ought to or need to be measured? To what extent is it important to rely on objective rather than subjective measures of performance? Does there exist any consensus on the ultimate meaning of the word “performance” when applied to a public procurement system?

6. The last question deserves to be addressed before tackling the other two, since it seems a sound logical argument to identify, even imprecisely, any social phenomenon before applying to it a set of measurement systems. “Performance” is to be interpreted, at least in the relevant context we are considering, as the “action or process of performing a task or function.”³ This definition becomes more convoluted and multifaceted when applied to public procurement. First, public procurement processes normally consist in a sequence of interlinked (simpler) (sub-)tasks. Second, the set of procurement processes aim at achieving more than one objective at the time. Third, the actual performance depends heavily on the behaviour of different agents who interact in an environment of *co-opetition*.⁴ Thus a rough painting of the performance of a public procurement system would have to contain the following ingredients: objectives and the objectives’ decision makers, the possible routes to achieve those objectives, and the profiles/characteristics of those agents interacting along the road.

7. This line of reasoning leaves us in a less uncomfortable position to address the next critical question: how would we recognize a *good* procurement system? Without any pretention of being exhaustive and conclusive, it is possible to list at least two sets of (possibly sufficient) conditions for a public procurement system to be considered as *good* or *sound*:

- Existence of decision centres setting possible multiple and non-contradictory objectives, and periodically assessing whether the system works coherently with those objectives;
- The system is built on a set of processes that maximize the likelihood of reaching the system’s objectives while minimizing the use of resources.

8. The succinct expression “use of resources” captures in fact multiple sub-dimensions comprising the adoption of technological advanced solutions reducing the time for tasks completion, the quantity and quality of the workforce, and the extent to which the interaction among involved parties is adversarial rather than collaborative.

9. Consequently, we shall group the main indicators into the following five classes or families:

- Strategic leadership

3 This definition is retrieved from oxforddictionaries.com.

4 We are perhaps abusing the concept as masterly discussed in Branderburger and Nalebuff (1997).

- Objectives
- Procedures/processes
- People
- Relationship with suppliers, end-users and other stakeholders.

10. In the next sections, we shall define several examples of indicators for each class and provide the rationales for our choice.

2. Strategic leadership

11. In most countries, the power to spend public money belongs to a multitude of different public organizations, differing from each other in terms of location, size, and nature of the mission. This often gives rise to an almost physically tangible fragmentation of the public procurement spend. This picture does not only apply to a national procurement system as a whole. It could be easily brought to the level of a single public entity consisting in several organizational units, each entrusted with the power of carrying out procurement processes.

12. When the number of contracting authorities (or organizational units) is high enough and when procurement processes pursue more than one single objective, it becomes of paramount importance to assess whether there exist institutional actors steering the system towards the desired goal, that is, setting a consistent set of objectives, designing an assessment system and correction mechanism.

13. We define this set of activities “strategic leadership” and gather some of indicators of the latter in the following box.

Box 1. Strategic leadership: Examples of performance measures and indicators

Metrics ST1

Existence of a strategy (ies) explicitly stating the main objectives of procurement processes

Sub-metrics ST1.1

Number of distinct objectives listed in the strategy (for instance, savings/value for money; sustainability; participation of SMEs; innovation)

Sub-metrics ST1.2

Existence of a prioritisation of these objectives in the strategy

Sub-metrics ST1.3

Existence of mandatory targets (e.g. to achieve socio-economic and/or environmental objectives)

Sub-metrics ST1.3

Number of different actors (namely, different institutions at the national level or different

organizational units at the single public entity level) consulted in the development of the strategy

Metrics ST2

Adoption of a clear process to collect and publish data on the performance of public procurement processes

Sub-metrics ST2.1

Number of different public organizations (or organizational units in the same organization) gathering data on procurement processes or to which public buyers (or purchasing units in the same organization) are obliged to provide data on procurement processes

Sub-metrics ST2.2

Number of different public organizations (or organizational units in the same organization) publishing statistics on procurement processes

Metrics ST3

Existence of a specialised unit or institution in the government making formal assessments of the extent to which procurement processes achieved their intended objectives (as listed possibly in the strategy)

Metrics ST4

Percentage (value) of procurement spending in goods / services / civil works that is benchmarked

Benchmarking here means using the outcome of a class of procurement processes to assess the goodness of the system (at the national or the single organization's level)

14. **Remark.** The list of indicators in box 1 reflects mainly whether or not “institutional leaders” are active or are explicitly entrusted with the power of defining/assessing public procurement strategies. It is far from being obvious to find objective measures of the consistency of different objectives. Since “consistency” mainly points at the absence of contradiction among objectives, the same set of objectives might show either a high or low level of consistency depending on the relative weight of each objective.

3. Objectives

15. This section aims at discussing the main objectives of public procurement strategies (e.g. savings./value for money, sustainability, promotion of SMEs) and how these could be measured, building on the experience of selected OECD countries.

16. Achieving value for money is a key driver of procurement reforms. This might result in governments using procurement for:

- Investment to boost the economy, for example in the form of fiscal stimulus packages. As an immediate response to the financial and economic crisis many countries launched in 2008

stimulus programmes, which resulted in increased funding for major investment projects in infrastructure across key sectors of the economy such as housing and transport⁵.

- Cost control, as part of their recent efforts to rein back public spending. This is very often done by rationalizing public expenditure for goods and services, which account for a considerable amount of resources. Being generally perceived as “politically less sensitive” than pensions or health expenditure, public spending for goods and services becomes almost naturally the target of cost-controlling policies.

17. While the financial dimension remains crucial, governments agencies are often willing to exchange better (resp., worse) financial conditions for lower (resp., higher) quality standards. Public buyers are also interested in *how* they can achieve the most suitable quality-price couple, namely the overall cost of carrying out *successfully* procurement process. The achieved quality-price ratio and the efficiency of public procurement processes constitute the three main ingredients of *value for money* in public procurement. While the next section discusses measures of savings at the purchasing stage, we shall postpone the analysis of transaction cost-related dimensions until the section on procurement procedures/processes.

3.1 Savings

18. Governments usually calculate savings in public procurement as a result of competition. Savings are very often considered as the natural consequence of transforming the acquisition process from one-to-one (say, a bilateral negotiation) to a one-to-many relationship (say, an auction). The relevant question then becomes how to estimate “savings” from using a competitive procurement procedure.

19. Auction theory⁶ teaches us that competition might make the buyer better off with respect the most easily available outside option, consisting often (albeit not always) in negotiating a deal with a local, possibly well-known, supplier. By attracting new bidders competition should in principle yields lower purchasing cost than a private deal with the local supplier. Thus, for a given reserve price, the degree of competition induced by the procurement procedure does have an impact on public buyers’ savings.

20. Before introducing the main indicators of this section, we define *percentage savings*, s , as follows. Call r the buyer’s reserve price and p^* the awarding price. Then

$$s \equiv [(r - p^*)/r] \cdot 100.$$

5 See in particular Progress made in implementing the OECD Recommendation on Enhancing Integrity in Public Procurement, Report to Council.

6 See, for instance, Krishna (2009).

Box 2. Savings

Examples of performance measures and indicators

Metrics S1

Average percentage savings through open competitive procedures (excluding e-auctions)

Metrics S2

Average percentage savings through the use of e-auctions

Savings are to be computed as the (percentage) difference between the reserve price and the awarding price, where the level of the reserve price should in principle be aligned to the purchasing cost through a direct negotiation with the most easily available supplier.

21. Metrics S1 is meant to capture the efficiency enhancement effect through an open procedure *without* relying on electronic means for submitting tenders. However, the adoption of ICT solutions in public procurement (“e-procurement”) is usually justified on the ground of speeding up processes and enlarging the set of potential participants. Thus the adoption of electronic solutions to award public contracts, such as e-auctions, may further increase savings. For example, the Mexican Federal Electricity Commission has accumulated savings of 9% since 2009 compared to the lowest original prices when acquiring coal through reversed auctions⁷.

22. Given that the reserve price is set according to the same logic both in S1 and S2, if the same good/service is procured in some cases by means of an open but not electronic procedure while in some other cases through an e-auction then, in principle, the difference between S1 and S2 might capture the additional effects of using e-auctions rather than a paper-based procedure.⁸

23. Note also that the computation *aggregated* savings from heterogeneous procurement procedures is made possible exactly by the logic of the reserve price which fully captures the good/service-specific level of heterogeneity. An example might help shed some light here. Suppose that a single public authority buys item A (say, PCs) and B (say, cleaning services) only. The estimated value of contract A (respectively, B) is V_A (respectively, V_B), where the latter is computed simply by multiplying the number of needed quantities by the (unit) reserve price. Suppose that the competitive process for contract A (respectively, B) delivers s_A (respectively, s_B) of percentage savings. Then the public authority’s achieved *average* percentage savings s_{avg} would become

$$s_{avg} = s_A \cdot V_A / (V_A + V_B) + s_B \cdot V_B / (V_A + V_B).$$

24. Savings may also be generated by *aggregating demand* of different public authorities through arrangements such as framework agreements. The more standardized the product/service the more potentially advantageous to aggregate demand, since suppliers are in a position to exploit economies of scale, thus operating at a lower unit cost.

⁷ OECD Public Procurement Review of the Electric Utility of Mexico: Towards Procurement Excellence in the Federal Electricity Commission (CFE), OECD Publishing.

⁸ Needless to say, this exercise would need lots of data coming from the two types of procedures and a high level of confidence that all reserve prices have been set according to a very similar, if not identical, logic.

25. Lower production costs, however, may yield lower purchasing prices *only if* the buyer keeps intact or increases its bargaining power. The degree of competition is usually expected to increase with the value of procurement contracts. Particularly in markets where the public sector accounts for a relevant share of the total demand, centralization, standardization and aggregation can put the winner of a single competitive tendering in a position to significantly increase its market share. This strengthens the bargaining power of the public agency awarding the contract, so leading the suppliers to compete more fiercely to offer lower (purchasing) price⁹ and better quality.

26. Yet, two conflicting forces come into play. For a *given number* of competitors, demand aggregation leads to fiercer competition. However, as the size of contracts gets larger, smaller firms may find it impossible to participate in the competitive processes – because of more demanding economic and financial requisites – thus leading to a lower number of competitors. Assuming that in most circumstances the lower participation effect is not strong enough, *demand aggregation usually leads to higher savings*.

Box 2 (continue). Savings

Examples of performance measures and indicators

Metrics S3*

Average percentage savings through (competitive) demand aggregation arrangements (e.g. framework agreements)

Savings are to be computed as the (percentage) difference between the reserve price and the awarding price. Unlike S1 and S2, the reserve price should in principle reflect the *average* purchasing price that each single public authority might fetch by carrying out a procurement process on its own.

Metrics S4

Average percentage variation of the awarding price (from possibly any type of procurement procedure) between year t and t+1

The average percentage variation, Δ_{t+1} , is defined as

$$\Delta_{t+1} \equiv [(p_{t+1}^* - p_t^*) / p_t^*] \cdot 100.$$

27. **Remark 1.** Computing savings in the case of aggregated (or joint) purchases is then a much trickier exercise than in the case of a single purchasing entity. It would then be advisable to undertake such a measurement exercise only if it is possible to interact with procurement personnel specialized in demand aggregation (say, specialists working for a centralized procurement agency).

28. **Remark 2.** A positive value of S3 immediately implies that some forms of demand aggregation generate a higher level of efficiency than procurement processes independently run by single public authorities.

29. **Remark 3.** S4 provides a simple measure to monitor the evolution over time of the awarding prices for homogenous public contracts.

⁹ The importance of measuring other financial dimensions arising over the relevant time horizon will be considered in section below on sustainability.

3.2 Sustainability

30. *Sustainable public procurement* (SPP) includes environment-related and social considerations in the design of procurement strategies. SPP broadens the scope of public procurement by including a potentially wide array of externalities, be them towards the environment or the welfare of stakeholders who are not necessarily parties to the public contract. This section will discuss the two main components of sustainability: environmental considerations (the so-called *green public procurement*) and social considerations (the so-called *socially responsible public procurement*).

31. The broad objective of green public procurement (GPP) is to design procurement strategies so as to minimize the amount of negative externalities on the environment. To better clarify this objective, it would be useful to mention some of the main findings of a research project – called RELIEF¹⁰ – co-funded by the EC, aiming at scientifically assessing the potential environmental benefits of EU-wide green procurement strategies. The findings concluded that:

- “If all public authorities across the EU demanded green electricity, this would save the equivalent of 60 million tonnes of CO₂, which is equivalent to 18% of the EU’s greenhouse gas reduction commitment under the Kyoto Protocol. Nearly the same saving could be achieved if public authorities opted for buildings of high environmental quality.
- If all public authorities across the EU were to require more energy-efficient computers, and this led the whole market to move in that direction, this would result in 830.000 tonnes of CO₂ savings.
- If all European public authorities opted for efficient toilets and taps in their buildings, this would reduce water consumption by 200 million tonnes (equivalent to 0.6% of total household consumption in the EU).”

32. The findings just mentioned emphasize “social” benefits stemming from green procurement, that is, the reduction of negative externalities from lower CO₂ and pollutants emissions or lower consumption of raw materials. Thus, under normal circumstances, procurement strategies with a positive (respectively, negative) environmental impact are typically cases of positive (respectively, negative) externalities. GPP strategies may also generate private benefits, accruing directly to the public buyer. In most cases, they arise from future savings due, for instance, to lower consumption of energy or water or from lower waste or disposal cost. But sometimes there might be concerns about better or healthier working conditions for the employees, which might also result in lower risks for the employer.

33. The distinction between social and private benefits is often blurred. The two effects often coexist and are strongly related. Energy efficient solutions, for instance, allow lower consumption yielding both lower operating expenditures for the buyer and lower pollution for the environment. In general, green purchasing accruing private benefits to the buyer generates a positive externality on the environment as well. The converse is not always true, though. In some cases, green products might leave unchanged or even decrease the direct utility of the procurer. Consider, for instance, the use of recycled paper for printers, which has a lower environmental impact than bleached paper but brings no advantage to the users, either in terms of quality (which, on the contrary, may be perceived as lower) or in terms of costs (which may be higher). Another example is the procurement of products with low environmental impact at the production phase, which may result more costly without providing the user with any additional benefit.

10 For more on the RELIEF project see ICLEI, Local Government for Sustainability, 2001-2003

34. Most guidelines on GPP seem to neglect this important distinction which, in turn, is likely to strongly affect the buyers' willingness to pay for green products. In 2010 over three-quarter of OECD countries indicated that the primary concern of procurement officials in the use of GPP is the possibility of higher prices resulting from more stringent environmental criteria.¹¹

35. Assessing the costs of a good or service over its whole life cycle rather than at its market price could address this, but implementation of this practice remains a challenge. In fact, public buyers might be willing to pay a higher purchasing price against future savings on usage and disposal provided that there is the budget flexibility to do so over time. However the absence of incentives for procurement officials to take into account environmental considerations is an obstacle to the use of green public procurement – for example, many OECD countries do not set mandatory targets for GPP and often fail in verifying whether these targets were achieved in practice.

36. In order to assess, at least partially, the benefits from GPP strategies public buyers are bound to stretch the time horizon for evaluating the financial dimension(s) of a public contract. Indeed evaluating the financial component(s) at the purchasing stage only underestimates the buyer's overall cost of ownership, since it typically underestimates all kinds of costs arising throughout the life cycle of a good, service and civil work. Stretching the time horizon for evaluating the financial dimension(s) of the value for money may thus have at least two benefits: *i*) it makes all financial components more visible and transparent, thereby allowing public buyers to trade-off, say, a higher purchasing cost today with a lower maintenance cost tomorrow; *ii*) expenditures at different stages of the life-cycle are emphasized, thus allowing public buyers to better plan - whenever admissible by public accounting rules - budgetary predictions over several years.

37. The methodology to evaluate at the same time purchasing costs, operating costs (e.g., energy, spares and maintenance) and end-of-life costs (e.g., decommissioning and removal) is known as *whole life-cycle* or *life-cycle costing* (LCC). This approach has become a key tool for implementing GPP that has become in recent years one of the pillars of international policy guidelines on public procurement.

38. While forcing public buyers to evaluate a contract's financial terms by looking at the whole life cycle, the LCC does not restrict *per se* the set of possible green solutions to be considered. In many cases, though, public buyers are willing to send stronger signals to markets by raising the minimal environmental standards that a good (or some of the phases of a production process) has to comply in order to be considered an admissible solution.

39. Governments are also increasingly using socially responsible public procurement (SRPP), that is, procurement operations taking into account one or more of the following social considerations: employment opportunities, decent work, compliance with social and labor rights, social inclusion (including persons with disabilities), equal opportunities, accessibility design for all, ethical trade issues and wider voluntary compliance with corporate social responsibility (CSR).¹²

40. The dimensions included in SRPP are quite heterogeneous. The most frequently adopted social dimensions would include:

11 OECD (2011), "Special feature: Green procurement", in Government at a Glance 2011, OECD Publishing.
http://dx.doi.org/10.1787/gov_glance-2011-49-en

12 European Commission (2010), "Buying Social. A Guide to Taking Account of Social Considerations in Public Procurement", retrieved on 18th Sept 2012 from http://ec.europa.eu/internal_market/publicprocurement/other_aspects/index_en.htm#social

- a) **Workers' welfare** (e.g., compliance with core labor standards, occupational health and safety, access to training, access to basic social protection);
- b) **Gender considerations** (e.g., gender balance and non-discrimination, compliance with the principle of equal treatment between women and men, including the principle of equal pay for work of equal value);
- c) **Fight against discrimination on other than gender grounds** (age, disability, religion and belief, sexual orientation, etc.)
- d) **Accessibility.**

41. Similarly to GPP, social considerations can enter technical specifications, selection criteria, award criteria and contract performance clauses.

42. The discussion above leads to the following suggestions for sustainability-related indicators.

Box 3. Sustainability-related aspects of procurement

Examples of performance measures and indicators

Metrics GS1

Percentage (both number and value) of awarded procurement contracts in which environment-related technical dimensions are considered either in the selection or the award criteria

Sub-metrics GS1.1

Percentage (both number and value) of awarded procurement contracts in which the whole life-cycle or life-cycle costing is explicitly taken into consideration

Metrics GS1.2*

Estimated percentage reduction of CO₂ emissions through the adoption of environmental-related technical dimensions (either in the selection or the award criteria)

Metrics GS3

Percentage (both number and value) of awarded procurement contracts in which social dimensions are considered either in the selection or the award criteria

43. **Remark 1.** Metrics GS1 and GS2 provide two admittedly rough measures of the extent to which sustainability-related considerations enter procurement processes mainly for they fail to discriminate the impact of those considerations in the selection rather than in the award criteria. They ought to be considered as a sound starting point to evaluate how procurement strategies *evolve* over time to include external effects. Both metrics could in principle be refined to capture the weight of sustainability-related considerations in the selection criteria relatively to the one in the award criteria.

44. **Remark 2.** Unlike the first three metrics, GS4 aims at measuring the outcome brought about by the adoption of environment-related criteria. If, for instance, the selection criteria were to include the "ENERGY STAR" requirements for computers¹³ then it would be possible to estimate the average energy consumption reduction over the computer's life-cycle which would immediately translate in CO₂

13 See http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CO

reduction. A similar computation could also be performed for cars. Moving from a less stringent to a more stringent certification label would also require the same kind of computation.

3.3 *Inclusion of Small and Medium Enterprises (SMEs) in public procurement markets*

45. Given the significance of SMEs to the global economy and labour market, which represent for example 98% of enterprises in the EU, of which 92.2% are firms with ten or fewer employees, policy makers are increasingly concerned about potential barriers to entry for SMEs in public procurement markets. Since public procurement accounts for as much as 13.4% of GDP in OECD countries, it can have a significant impact not only on the share of government contracts awarded to SMEs but also on job creation.

46. The following section analyses both the measures to facilitate SMEs access to government contracts as well as specific set-asides (to reserve a certain amount of procurement value for SMEs).

Box 4. SMEs participation in procurement

Examples of performance measures and indicators

Inclusion of SMEs in public procurement markets

Metrics IN1

Average percentage (both number and value) of procurement contracts that are awarded to SMEs

Sub-metrics IN1.1*

Average percentage (both number and value) of procurement contracts that are awarded to SMEs through e-auctions

Sub-metrics IN1.2

Average percentage (both number and value) of procurement contracts that are awarded to SMEs when demand aggregation arrangements are in place (e.g., fraction of contracts awarded to SMEs in framework agreements)

Positively discriminatory policies in favor of SMEs and other classes of firms (according to the nature of ownership, geographical location etc.)

Metrics IN2

Does public procurement regulation allow for set asides? (YES/NO)

“Set asides” are public contracts that can awarded only to a specific family of firms (say, SMEs but also minority-owned firms).

Sub-metrics IN2.1*:

Number and value of requirements set aside for SMEs

Other measures to facilitate access of SMEs to procurement markets

Metrics IN3

Existence of preferential financial treatment of SMEs (e.g. waiving fees)

47. **Remark 1.** Indicator IN1 is the most relevant in capturing the degree of fairness of the procurement system towards SMEs. By comparing the value of IN1 in any given year to the share of SMEs in the overall economy one gets an immediate measure of heterogeneity of the procurement market relative to the whole economy. It would be advisable that the indicator be split according to different types of procedures (say, competitive vs. non-competitive procedures).

48. **Remark 2.** Indicator IN1.1 focuses on the share of public contracts awarded to SMEs through e-auctions, that are often considered an effective way to foster participation in competitive procurement procedures. However, this does not imply *per se* that SMEs would benefit more than bigger firms in participating in e-auctions. Thus, by comparing in any given year the values of IN1 and IN1.1* it would be possible to roughly assess whether or not e-auctions have an adverse effect on SMEs.

49. **Remark 3.** Indicator IN1.3 focuses on SMEs' shares of public contracts when some form of aggregation of demand is in place. Under normal circumstances, aggregation of demand plays against SMEs because the higher-than-average value of contracts becomes a barrier to entry. Consequently, one would reasonably expect the value of IN1.3 to be lower than that of IN1 in any given year. It is then the evolution over time of the difference between those two values which provides a meaningful piece of information about whether or not pro-SMEs policies are effective.

50. **Remark 4.** IN2 helps us better interpret the value of IN1. It is indeed more likely that the value of IN1 to be high if "YES" is the answer to IN2.

4. Procedures/Processes

51. How smoothly and effectively do public buyers reach the objectives set in the strategic plans? What kind of organizational forms are implemented? To what extent public procurement processes are open and competitive are public procurement processes? These are three among the most relevant questions concerning the profile of the public procurement "machinery", be it at the level of the whole system or at the one of a single purchasing organization.

52. The organizational dimensions in public procurement refer to the set of arrangements designed to meet needs for goods/services/civil works. More specifically, once needs are collected and classified according to the relevant dimensions (e.g., intermediate consumption vs. investment, goods vs. services, input- vs. output-driven etc.) one fundamental decision concerns to what extent public contracts are to be bundled together. The level of "demand aggregation" is independent of whether we are considering a single purchasing organization rather than the whole national system, although the level of complexity of the problem is, needless to say, much higher in the latter case than in the former.

53. Different organizational solutions often imply different amount of human resources and duration of the procurement processes (mainly until contract award). The next box gathers a set on indicators aiming at capturing the main features in terms of i) demand aggregation, ii) level of specialization of purchasing organizations; iii) quantity of workforce; and iv) duration of public procurement processes.

Box 5. Efficiency of procurement processes:

Examples of performance measures and indicators

Metrics A1

Existence of a central purchasing body(ies) at central and/or local levels or shared services across public contracting authorities (YES/NO)

Sub-metrics A1.2

Fraction of the overall value of procurement contracts awarded independently of any other contracting authority

Metrics A2 ***Percentage of public contracts awarded through centralized/joint procurement procedures across contracting authorities***

Aggregation of public demand can be implemented by using two broad classes of arrangement: *i*) by having a procurement agency (body) awarding contracts on behalf of other public organizations; *ii*) by a cooperation agreement among purchasing organizations pooling resources to award contracts that satisfy the organizations' needs.

Metrics A3

Number of operating e-procurement platforms at the national and the local level and average value of public contracts awarded by using the functionalities of each platform

Resource consumptionMetrics RC1

Average number of functional Full-Time Equivalent (FTEs) used process until contract award in i) open; ii) restricted; and iii) negotiated procedures

A **full-time equivalent** (FTE) is a unit to measure employed persons in a way that makes them comparable although they may work a different number of hours per week.

The unit is obtained by comparing an employee's average number of hours worked to the average number of hours of a full-time worker. A full-time person is therefore counted as one FTE, while a part-time worker gets a score in proportion to the hours he or she works. For example, a part-time worker employed for 20 hours a week where full-time work consists of 40 hours, is counted as 0.5 FTE.¹⁴

Metrics RC2

Average value of a procurement process managed by each FTE

RC2 is to be constructed by taking the estimated value of procurement processes divided by the overall number of procurement-related FTEs.

Metrics RC3

Average elapsed number of days between the publication of the call for tenders and contract award in i) open; ii) restricted; and iii) negotiated procedures

14 We borrow the definition of full-time equivalent from http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Full-time_equivalent

54. **Remark 1.** Indicators A1 to A3 are meant to capture the main organizational features of a public procurement system at either the national or regional level. Indicator A1.2 addresses a potentially relevant characteristic of a single purchasing authority, namely the extent to which the latter is able to fulfil its needs by relying on internal procurement capacities. If the authority's procurement expenditure were to be fairly evenly split among different items, then indicator A1.2 would be a good approximation of the degree of procurement specialization (under the assumption that the procurement of a particular class of goods/services/civil works is either completely insourced or entirely outsourced).

55. **Remark 2.** Indicators RC1 and RC3 simply capture how much/long it takes to award a contract (by possibly distinguishing among different kinds of procurement procedures). Data are likely to be more easily collected at a single purchasing authority level. In order to use both indicators for local vs. national or international comparisons it seems more appropriate to stick to the "time" dimension (either in terms of workforce's days or elapsed time between the relevant interval) rather than the "cost" dimension.

56. **Remark 3.** It is not necessarily the case that a high measured value of RC1 goes always hand in hand with a high value of RC3. For instance, if a public authority aggregates demand on behalf of other public entities this might result in a higher RC1 and a lower RC3 than those of a public entity independently carrying out its procurement processes. Indeed, in the first case procurement processes might be shorter but require more people working simultaneously (*specialized know-how*).

57. **Remark 4.** The *cost* of human resources throughout the procurement process - that is, the number of employed FTEs times the average wage per FTE - would provide in principle a ballpark estimate of process costs. Thus one would be in principle in a good position to fully compare the performance of two different procurement procedures, say, an open procedure vs. a negotiated one, both aiming at awarding similar (albeit not necessarily identical) contracts. By comparing *purchasing savings* and the *cost of human resources* one could rank the two options at least in term of (overall) cost effectiveness. However, it is arguable that collecting data on the average wage per FTE might be difficult *per se* and/or raise other kinds of concerns. Consequently, we have decided to focus on the number of FTEs to capture the human resource dimension.

58. The next two boxes gather indicators on some *qualitative* dimensions of public procurement processes, namely *i*) the extent to which they favour competition; *ii*) the extent to which the relationship among the involved actors is adversarial; and *iii*) the ability to solicit different solutions from the market.

Box 6. Openness of procurement processes

Examples of performance measures and indicators

Metrics OT1

Percentage (both number and value) of procurement call for tenders being published online

Metrics OT2

Percentage (both number and value) of procurement contracts awarded by means of non-competitive procedures (that is, exceptions to competition where the procuring entity contacts a single supplier in order to solicit a proposal or a price quotation without competitive tendering)

Metrics OT3

Percentage (both number and value) of procurement contracts for which foreign suppliers are NOT allowed to bid

Metrics OT4

Percentage (both number and value) of procurement contracts awarded by using e-auctions

Metrics OT5

Average number of bids submitted in (open) competitive procedures for i) goods, ii) services, and iii) civil works

The number of bids coincides here with the number of distinct tenders. Thus if several firms participate in joint venture form their tender represents one single bid.

59. Remark. Indicators OT1 to OT4 capture quite intuitively some features of the level openness/transparency of a public procurement system - be it at the national level or the single procuring entity level - by considering different *stages* of the procurement processes or the *nature* of the procurement procedure. Indicator OT3 aims at capturing to what extent a procurement system builds *formal* barriers to entry against foreign suppliers. It is worth noticing that OT5 may capture, at least indirectly, the degree of openness of a competitive procedure as well as it may represent a proxy for the (average) *degree of competition*.

Box 7. Effectiveness/quality of procurement processes:

Examples of performance measures and indicators

Metrics EQ1

Percentage (both number and value) of procurement processes that are not awarded, split among the following three classes:

- (Overstretched) litigation
- No bids
- At least one bid was received, but none were technically and financially acceptable
- The procurement process was cancelled prior to bid closing.
- Other reasons

Metrics EQ2

Frequency of litigation from the publication of the call for tenders until the end of contract execution

Sub-metrics EQ2.1

Frequency of litigation until contract award

Sub-metrics EQ2.1

Frequency of litigation after contract award

Litigation ought to be interpreted here in the broadest possible sense, from officially posting a protest up to filing a lawsuit in the relevant court. Sub-metrics EQ2.1 captures pathological circumstances when firms compete for the contract, while EQ2.2 captures possible adversarial aspects of the bilateral relationship between the public buyer and the selected contractor at the contract management phase.

Metrics EQ3

Percentage (both number and value) of competitive processes awarded by means of the value for money criterion (in which both technical and financial dimensions are considered in the award criteria)

The “value for money” criterion (a.k.a. the “economically most advantageous tender” criterion) allows a procuring entity to assess both financial and non-financial dimensions in the award criteria. Usually, the call for tender specifies the relative importance (“weighting”) of the different classes of dimensions for contract award.

60. Remark. While indicators EQ1 and EQ2 focuses on the quality/effectiveness of a procurement *process*, indicators EQ2 and EQ3 look at the consequences of a(n) (average) procurement process. In particular, EQ2 measures how often public buyers attempt at enlarging the range of possible buying options by having recourse to an award criterion that evaluates at the same time financial and non-financial dimensions.

5. People

61. Public procurement, like other supply management operations, has progressively moved away from the transactional focus of purchase order processing to a strategic role in government. Traditionally, compliance with policies and procedures was a primary focus, today’s public procurement professionals encounter more complexity and a more central role in organizational performance. While traditionally purchasing agents often executed purchase orders with suppliers identified by consumer agencies, today’s procurement professionals are more central to *defining* and *implementing* procurement strategies for the stakeholders/principal(s).¹⁵ Procurement professionals are asked to carry out market intelligence analyses, to state and pursue several co-existing objectives, to handle complex contracting arrangements and to execute and administer them. Further, the competing issues in centralization versus decentralization have taken on new meaning as the role of procurement in overall organizational effectiveness and efficiency becomes more recognized. In general, as public organizations focus more on the strategic implications of performance management, procurement professionals find themselves in a continually evolving role.

62. Therefore public organizations find themselves more and more strained in their effort to *recruit*, *develop* and *retain* good talents in the procurement function. In spite of the professionally evolving character of the role of procurement officer, the career path in the civil service does not often the necessary degrees of freedom to adequately reward the strategic value of valuable talents in the procurement function.

63. In order to assess to what extent the acquisition and the development of human capital in the public procurement is considered a top-ranked priority in any public procurement organization the following dimensions could be considered:

- Professional profile
- Human capital development and career development.

15 See Yukins (2010).

Box 8. Professionalism in the procurement function:

Examples of performance measures and indicators

Professional profile

Metrics PP1

Percentage of public officials working on procurement-related tasks (whose job profile includes some procurement-related duties)

Sub-metrics PP1.1

Percentage of contractors vs. full-staff procurement officials

“Contractors” would include all workers who are not on the purchasing organization’s payroll

Sub-metrics PP1.2

Percentage of public officials working full time on procurement-related tasks

Sub-metrics PP1.3

Existence of inter-disciplinary teams to bring together different expertise

Metrics PP2

Average number of years of experience of procurement officials

Metrics PP4

Percentage of full-staff procurement officials holding a higher level of education

Higher level of education is in fact very country-specific. In some cases, the indicator would capture a higher-than-average number of years of education, in other cases, say, a University degree, while in some others a mixture of education degree and number of years of experience.

Human capital development

Metrics HC1

Average number of hours of training on procurement topics received by each full-staff procurement official in the previous year

Metrics HC2

Existence of a certification program (either compulsory or voluntary) for procurement officials

Sub-metrics HC1:

Percentage of officials having completed a certification program

Metrics HC3

Average job rotation across procurement entities

64. **Remark 1.** Indicators PP1 to PP4 capture three main sub-dimensions of procurement officials profiles: the *degree of professionalization* (full time vs. part time); the *degree of insourcing* of procurement skills in any organization (full staff vs. contractors); the *demographics* of the procurement workforce.

65. **Remark 2.** Indicator HC1 captures whether or not minimal quality standards are implemented on the procurement workforce, while HC2 measures the level investments in human capital in the procurement profession. The quality of the procurement workforce is in principle higher the higher the value of HC2 together with a certification program for procurement officials.

66. **Remark 3.** Job rotation can have different objectives: it could facilitate human capital accumulation (the same official works on different tasks over her/his career), it could also be used as anti-corruption device (by reducing the likelihood that the same procurement official interacts with the same set of suppliers over a long period of time).

6. Relationship with suppliers, end-users and other stakeholders

67. A constructive and non-adversarial relationship with the supply market is quintessential to fully reap the benefits of well-designed public procurement processes. This statement becomes even stronger once a procurement process has been finalized and the contractor(s) has (have) been selected. It is only after the contract award that a formal buyer-supplier relationship deploys all binding consequences. In spite of this, the contract execution phase is often subject to a far lower level of scrutiny than the pre-award phase. This is mainly due to the incorrect perception that all fair-competition concerns vanish once the contractor is selected. More recently, though, it has been internationally recognized that proper execution of public contracts does matter not only in terms integrity of procurement processes but also because it protects the rights of all non-selected firms.¹⁶ Losing bidders ought to be reassured that they were not selected because the selected contractor did not only submit the best “promised” value for money, but will in fact deliver the best value-for-money *performance*. Were this not be the case the main goal of the competitive mechanism would be undermined, thus distorting competition for the market of public contracts. Only fair behavior at the execution stage, namely the overall compliance with contract conditions set at the awarding stage, ensures a real and effective competition in the entire cycle of public procurement.

68. Box 9 collects a set of indicators aiming at measuring the quality of the buyer-supplier relationship also by relying on measurement systems that do not hinge on objective dimensions. Indeed, as in any relationship, there exist soft dimensions that affect the quality of the relationship itself albeit they cannot be measured according to objective (that is, verifiable by third parties) dimensions.¹⁷

69. Finally, box 10 collects some indicators pointing at the relationship with other stakeholders (different from potential suppliers / contractors). That a local community has a stake in the realization of a big infrastructural project seems evident. It may sound, however, less obvious that civil society or a certain part of it claims a stake in the oversight of some phases of public procurement processes, most notably the management of public contracts. One intuitive reason hinges on the growing collective interest in the integrity of the government’s functions and, more recently, in the importance of sustainability dimensions of public procurement.

16 Losing bidders may potentially play the role of “watchdogs” at the contract execution phase. See Racca et al. (2011).

17 In the public procurement of consulting services one often-cited example of soft performance dimension is the consultant’s degree of proactiveness.

Box 9. Relationships with suppliers, end-users and other stakeholders

Examples of performance measures and indicators

Suppliers

Metrics RS1

Average number of weeks (or days) for paying suppliers in practice

Submetrics RS1

Percentage of late payments of suppliers in previous year

Metrics RS2*

Percentage (both number and value) of contracts that are entirely cancelled (“rescinded”) during the contract execution

Metrics RS3

Delays in contract completion [applies mainly to civil works]

Submetrics RS3.1

Percentage of occurrence of delays in contract completion

Submetrics RS3.2

Average number of days of delay in contract completion

Metrics RS4

Cost overruns [applies mainly to civil works]

Submetrics RS4.1

Percentage of occurrence of cost overruns

Submetrics RS4.2

Average value of cost overruns (as measured by the percentage of the awarding price of the contract)

Metrics RS5

Existence of recording programs on suppliers performance

Metrics RS6

Existence of suppliers’ white lists or other reputation mechanisms

Metrics RS7

Regularity of training programs / informative session specifically designed for suppliers /suppliers association in previous year

Metrics RS8

Level of “suppliers satisfaction index” (if a measurement system is in place such the suppliers satisfaction surveys)

Relationship with end-users

Metrics RE1

Level of “customers satisfaction index” (if a measurement system is in place such as the customers satisfaction surveys)

Metrics RE2

Adoption of other systems different from customer satisfaction surveys to gather end-users’ feedback (“voice”)

A “voice” system might include informal internet fora, publication of leaflets, “pressure groups” etc.

Relationship with other stakeholders

Metrics ROS1

Adoption of solutions involving civil society or other non-government stakeholders in the oversight of the contract management

PART II

70. Considering the economic importance of procurement which represents on average 13,4% of GDP in OECD countries, governments are increasingly interested in understanding how public procurement strategies can affect national competitiveness. Part II of the paper will explore a practical chain of effects linking public procurement to national competitiveness as a first basis for future work on this issue.

1. Public Procurement and National Competitiveness

1.1 *On the notion of Competitiveness*

71. Over the past two decades or so, the term competitiveness has been used in a variety of ways and, sometimes abused. Both the questions and the issues that are at the heart of the concept of competitiveness are basically those that policy makers and academic economists alike have been addressing for quite a long time, namely how to improve well-being and the distribution of wealth. In the European context, for instance, the Lisbon strategy¹⁸ pledges to make the EU the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion.

72. While there seems to exist a wide consensus on the notion of competitiveness at the firm or *microeconomic* level¹⁹, at the *macroeconomic* level the same concept is more blurred and sometimes strongly contested. Krugman (1994) and (1996), who goes so far as to depict the notion of national competitiveness as a dangerous obsession, raises three points of opposition:

1. It is misleading to make an analogy between a nation and a firm; for example whereas an unsuccessful firm will ultimately go out of business there is no equivalent “bottom-line” for a nation.
2. Whereas firms can be seen to compete for market share and one firm’s success will be at the expense of another’s, the success of one country or region creates rather than destroys opportunities for others and trade between nations is well known not to be a *zero-sum game*.

18 European Commission (2010b)

19 At the firm level, competitiveness points clearly towards firms’ ability to compete, to grow and to be profitable. Thus a competitive firm is able to produce profitably products that meet the requirements of an open market in terms of price and quality. The more competitive a firm relative to its rivals the stronger its ability to gain market share and ultimately the higher the likelihood the same firm will survive in the market. Conversely, uncompetitive firms will see their market shares wane and, absent any external support or protection, are likely to go out of business.

3. If competitiveness has any meaning then it is simply another way of saying *productivity*; growth in national living standards is essentially determined by the growth rate of productivity.

73. There is a growing consensus about the idea that improvements in one nation's well-being need not be at the expense of another's (that is, at the global level nations are likely to play a *positive-sum game*), and that productivity is one of the central concerns of competitiveness. This "consensus view" can be illustrated by the following definitions.

"A nation's competitiveness is the degree to which it can, under free and fair market conditions, produce goods and services that meet the test of international markets while simultaneously expanding the real incomes of its citizens.

Competitiveness at the national level is based on superior productivity performance and the economy's ability to shift output to high productivity activities which in turn can generate high levels of real wages. Competitiveness is associated with rising living standards, expanding employment opportunities, and the ability of a nation to maintain its international obligations. It is not just a measure of the nation's ability to sell abroad, and to maintain a trade equilibrium."²⁰

"[Competitiveness] may be defined as the degree to which, under open market conditions, a country can produce goods and services that meet the test of foreign competition while simultaneously maintaining and expanding domestic real income."²¹

"An economy is competitive if its population can enjoy high and rising standards of living and high employment on a sustainable basis. More precisely, the level of economic activity should not cause an unsustainable external balance of the economy nor should it compromise the welfare of future generations."²²

"Smart, sustainable and inclusive growth that secures the economic competitiveness of the EU in high-value added, high-wage activities will require a structural change of the EU economy towards higher knowledge intensity."²³

20 The President's Commission on Competitiveness (1984).

21 OECD (1992).

22 European Commission (2000).

23 European Commission (2011).

1.2 *The (Potential) Impact of Public Procurement on National Competitiveness*

74. To what extent is public procurement able to exert an impact on an economic system as whole? Or, to put it more precisely, can public procurement influence a nation's economic performance as captured by macroeconomic indicators? These questions are far from being of purely theoretical nature since, as discussed in the previous sections, public procurement is increasingly recognized as a tool for promoting a wide array of socially valuable objectives. It is, however, unclear whether, say, the promotion of comprehensive strategies of *sustainable* public procurement at a national level may represent a *competitive* leverage for the same country in international markets.

75. To the best of our knowledge, there does not exist any proven *direct* link between the main characteristics of a nation's public procurement system and its degree of competitiveness. A nation's competitiveness is not important *per se*, but because it is instrumental to both short-term and long-term growth. The previous section has made it clear that a *unanimous* and *precise* definition of national competitiveness is still lacking.

76. In spite of this difficulty, a more operational definition of national competitiveness can be used that would also be robust to Krugman's criticism, namely "**the set of institutions, policies and factors that determine the level of productivity of a country.**"²⁴ The latter, in turn, sets the level of prosperity that can be achieved by an economic system. Thus a nation's standard of living hinges on the capacity of its companies to both achieve high levels of productivity and to increase productivity over time. Economic growth depends ultimately on a country's ability to *upgrade itself*.²⁵

77. Many factors shape productivity and, in turn, competitiveness. This is in fact one of the historically most debated questions in economics that has spurred disputes among economists since Adam Smith's "An Enquiry into the Wealth of Nations". Theories range from labor specialization to the role of investments in physical capital and infrastructure and, more recently, have focused on human capital, technological progress, good governance and market efficiency. The current debate seems to recognize that multiple forces are at simultaneously at work in determining the level of national competitiveness (and growth).²⁶

2. Measures of National Competitiveness

78. Several institutions evaluate country competitiveness using a comprehensive approach which emphasizes non-price factors. Periodically, they provide country ranking in various sectors, combining statistical data and survey results. The following is a list of the main indicators:

- *Global Competitiveness Index (GCI)* – published annually by the World Economic Forum (WEF).²⁷ It captures the microeconomic and macroeconomic foundations of national competitiveness, including structural factors. The GCI considers 12 main determinants of competitiveness called "pillars": institutions, infrastructure, macroeconomic stability, health and primary education, higher education and training, goods market efficiency, labor market efficiency, financial market sophistication, technological readiness, market size, business sophistication, and innovation.

24 World Economic Forum (2012), p.4.

25 Porter (1990), p.76.

26 See, among others, Aghion and Howitt (2009) and Alesina and Rodrik (1994).

27 The Global Competitiveness Paper 2012-13 can be downloaded from <http://www.weforum.org/papers>

- *The World Competitiveness Index (WCI)* – published by the IMD²⁸, uses more than 300 criteria for evaluating enhancing factors for doing business and social welfare. It elaborates a country profile measuring macroeconomic performance, governmental and private sector efficiency and infrastructure levels.
- *The Doing Business Index* – published annually by the World Bank and the International Finance Corporation²⁹, investigates the business environment in countries, considering regulations that enhance business activity and those that constrain it. In its 2012 report, the World Bank covered 183 economies analyzing 10 indicators: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency.
- *The Competitive Industrial Performance Index (CIP)* – developed by the United Nations Industrial Development Organization (UNIDO) to benchmark national industrial performance.³⁰ It builds on the notion that national competitiveness is an economy’s ability to create welfare. The CIP index assesses industrial performance using indicators of an economy’s ability to produce and export manufactured goods competitively. The CIP index has six main dimensions: Industrial capacity (manufacturing value added per capita), manufactured export capacity, impact on world manufacturing value added (MVA), impact on world manufactures trade, industrialization intensity (share of manufacturing on GDP and share of medium and high-technology products in manufacturing), export quality (share of manufacturing in export and share of medium and high-technology products in manufactured exports).
- *Trade Performance Index (TPI)* – published every two years by the International Trade Center (ITC) in collaboration with UNCTAD, considers competitiveness level and export diversification for 180 countries in 14 macrosectors (fresh food and raw agricultural products, processed food and agro-based products, wood, wood products and paper, textiles, chemicals, leather and leather products, metal and other basic manufacturing, non-electric machinery, computers and telecommunications, electronic components, transport equipment, clothing, miscellaneous manufacturing, minerals).³¹ For each country and sector, the TPI covers basic performance characteristics, bringing out gains and losses in world market shares and shedding light on the factors behind these changes, as well as monitoring the diversification of export products and markets.

3. How Public Procurement May Affect National Competitiveness: The Main Transmission Chains

79. None of the dimensions used to construct the above indexes makes neither an explicit nor a direct link to public procurement. However, it is arguable that the latter can influence at least to some extent an influence to a subset of the economic variables that contribute to determine the level of national competitiveness. To this end it is worth focusing on the WEF’s GCI.

28 See http://www.imd.org/research/publications/wcy/upload/All_criteria_list.pdf

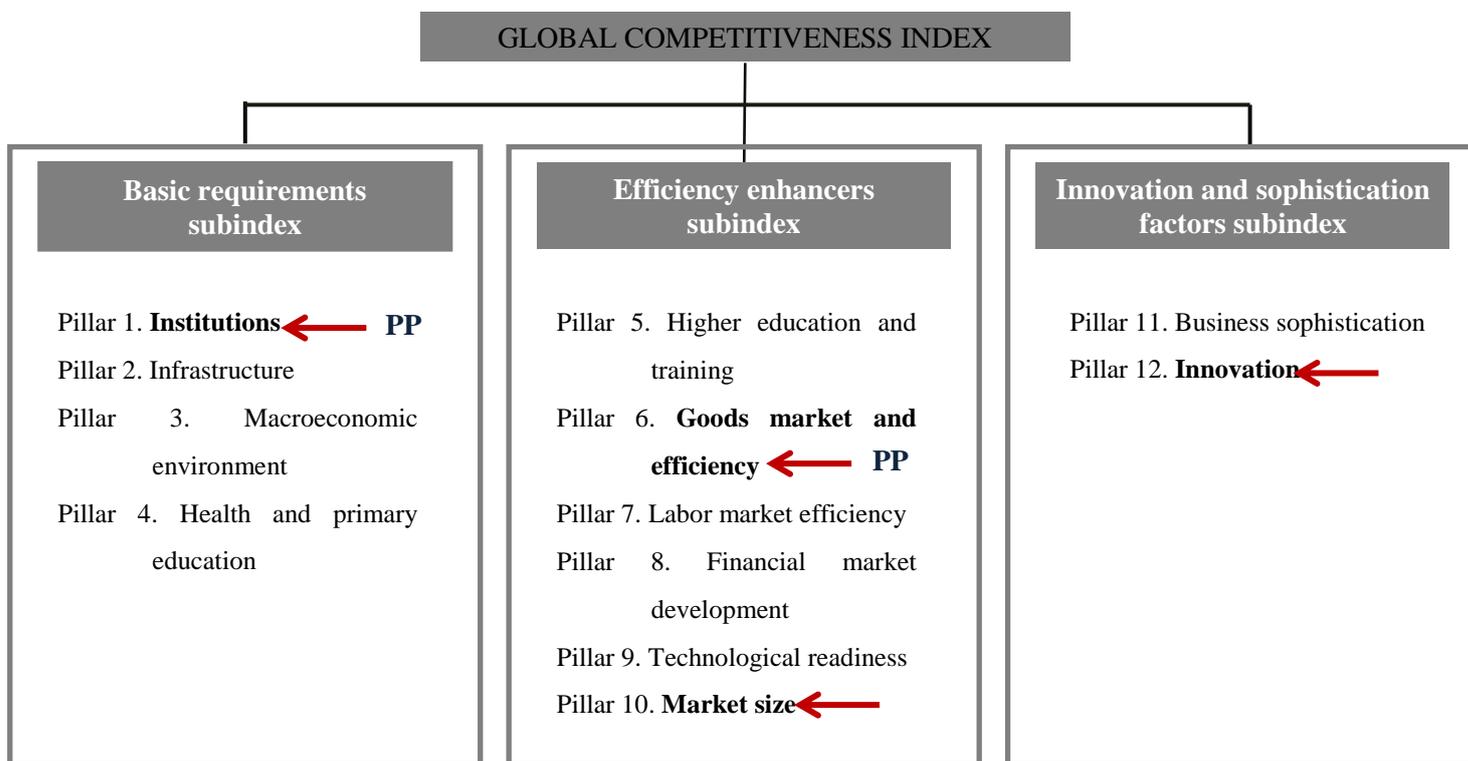
29 The paper can be downloaded from <http://www.doingbusiness.org/papers/global-papers/doing-business-2012>

30 The UNIDO 2011 paper can be downloaded from http://www.unido.org/fileadmin/user_media/Publications/IDR/2011/UNIDO_FULL_PAPER_EBOOK.pdf

31 See <http://legacy.intracen.org/appli1/TradeCom/Documents/TradeCompMap-Trade%20Performance%20Index-UserGuide-EN.pdf>

80. Table 1, borrowed from WEF (2012), provides the 12 pillars of competitiveness. At least three pillars seem likely to be affected by public procurement policies and strategies at a national level: Institutions, market size and innovation. In what follows we shall elaborate on the nature of the casual links.³²

Figure 1. Public Procurement and the Global Competitiveness Index



3.1 The Role of Institutions

81. The institutional environment is shaped by the legal and administrative framework in which individuals, firms and governments operate to produce wealth. A sound and fair institutional framework is quintessential to economic development. According to North and Thomas, dimensions such as innovation, economies of scale, education and capital accumulation “are not causes of growth: they *are* growth” (italics in original).³³ North (1990, p. 3) offers a definition of institutions as “the rules of the game in a society or, more formally, [...] the humanly devised constraints that shape human interaction” thus structuring “incentives in human exchange, whether political, social, or economic”.

82. Not only do economic institutions determine the aggregate potential of the economy, but also affect an array of economic outcomes, among which the distribution of resources in the future. Thus the main features of the institutional environment are likely to determine both the size of the aggregate pie and how the pie is divided among different groups. For instance, the protection of property rights influence the

32 Upon browsing the list of pillars in table 1, one would be inclined to believe that public procurement policies and processes affect also “Infrastructure”, “Health and Primary Education”, and “Higher Education.” We are, however, also inclined to believe that public procurement has a more direct link to the three selected pillars.

33 North and Thomas (1973), p. 2.

decisions of owners of land, corporate shares and intellectual property to invest in the improvement of their property. Government attitude toward markets and freedom and its operational efficiency plays an important role. Indeed phenomena such as corruption, red tape, lack of transparency and accountability, dishonesty in the management of public contracts, inefficiency in law enforcement and in the functioning of courts impose additional costs and uncertainty on firms, thus hampering significantly the process of economic development.

83. Many features of a nation's public procurement framework contribute substantially to determine the overall quality of public institutions. More specifically, all the measures aiming at strengthening the level of integrity of procurement processes³⁴ would exert a positive impact on the quality of (public) institutions as a whole.

3.2 *Market Size and Efficiency*

84. Market size may affect productivity via economy of scale. The size of available markets are in principle constrained by national borders, but increasing globalization has caused exports to become a (possibly imperfect) substitute for domestic markets. Although there does not exist unanimous *scientific* consensus on the positive relation between trade openness and growth, few would deny that trade has a positive effect on growth, especially for small countries. The case of the European Union illustrates the importance of the market size for competitiveness, as important efficiency gains were realized through closer integration during the past two decades. The trade in goods is in fact a major driver of growth in EU manufacturing industries. Some 25% of the EU-27 GDP is generated by the goods sector. Intra-EU trade of goods represents 75% of intra-EU trade flows. It has increased at an annual rate of 7.6% between 1999 and 2007.³⁵ Although the reduction of trade barriers and the harmonization of standards within the European Union have contributed to raising exports within the region, many factors still hamper the realization of a true single market, in particular in services, thus leading to important border effects.

85. The public procurement market is likely to mirror most of the features of the market as a whole. Thus while firms would certainly benefit from a larger absolute size of domestic markets, they would also profit from additional business opportunities from *cross-border* public procurement. In this respect, the potential size of the public procurement market which is relevant for firms located in a given country results from the sum of the value of the domestic market and the value of all procurement procedures abroad in which a non-domestic firm was allowed to participate. In other terms, *the size of the procurement market relevant to firms located in a given country depends also on the degree of openness of procurement markets in all other countries*. In practice cross-border procurement remains limited at the international level, even in a single market such as the European Union which is ruled by a common set of Directives. For example, in markets for public contracts which are the specific focus of EU public procurement legislation, only a small proportion of contracts are awarded for firms from another Member State with direct cross-border procurement accounting for 1.6% of awards.

86. While the absolute size of domestic market certainly matters for exploiting economies of scale, *ceteris paribus*, the degree of demand aggregation is likely to strengthen such cost-reducing effect. Thus for a given absolute value of the domestic public procurement market, the lower the number of procedures the higher the likelihood that (bigger) firms are able to exploit economies of scale. However, a domestic market with fewer and more sizeable public procurement procedures is more likely to cut off smaller firms that in many countries contribute positively to the innovative potential in the market. At the same time, smaller firms can participate in high-value procurement processes by either forming joint ventures to bid directly for the contract or by carrying out a fraction of the procurement contract via subcontracting. Thus

34 See, for instance, OECD (2009).

35 See Monti (2010)

any measure of demand centralization ought to be corrected by the degree of SMEs participation by means of joint ventures and/or subcontracting.

87. The absolute size of procurement markets allows firms to produce in principle at lower unit cost, but does not guarantee *per se* that the most efficient firms end up satisfying public buyers' needs. That is, it may well occur that large procurement markets reduce unit costs, but the most inefficient firms are being selected to produce goods, services and civil works. Procurement markets are *efficient* if they select (in most circumstances) the right mix of products/services for public buyers. This can be achieved when market competition is healthy and thus allows (mainly) the most efficient firms to thrive.

Box 10: Public Procurement Market Size and Efficiency

Examples of performance measures and indicators

Metrics MSE1

Descriptive statistics on the overall public procurement market (e.g., median (estimated) value; distribution according to different contract value; distribution according to the typology of public contract (goods, services, works)

Metrics MSE2

Total absolute value of the domestic public procurement market and value of procurement procedures abroad in which non-domestic firms were allowed to participate

Metrics MSE3

Degree of competition of domestic public procurement markets. For instance,

- a) Measure(s) of concentration*
- b) Number of lots (for a given class of values of contracts the average number of lots can be, at least roughly, inferred by dividing the number of contract by the number of procedures)*

3.3 Innovation

88. Innovation ultimately relies on production and diffusion of new knowledge, which can be seen as a public good able to bring positive externalities for the whole economy³⁶. A simple economic argument would provide the main rationale for public intervention in the innovation market.

89. A discussion about the public good nature of innovation goes far beyond the scope of this work.³⁷ Yet, it is fairly evident that almost all governments do commonly implement policies aimed at promoting innovation at different levels and through different instruments. Many of them are based on directly supporting and sustaining the “producers” of innovation (“market push” approach): from infrastructures building (say national high education systems) to subsidies to R&D activities.

90. On the other hand, innovation can also be boosted by acting on the demand side of the market (“market-pull” approach). In this sense the public demand, if managed through strategic public procurement strategies, can play an important role insofar as large-scale government purchases can be oriented toward goods with different R&D content. For instance, the crucial role of US defense acquisitions in triggering or boosting innovation in sectors like transports, ICT, electronics, new materials is widely recognized.³⁸

91. The major advantage of the “market-pull” approach is that it requires less information than the “market-push” one. In the economic literature, such ideas have been outlined, for instance, by Geroski (1990), Dalpé (1994) and Edler and Georghiou (2007). All of them emphasize how the effectiveness of a

36 This idea dates back at least to Arrow (1962).

37 More detailed discussion and further references on the relationship between procurement and innovation are presented by Cabral et al. (2006). Scotchmer (2004) provides a discussion on the economics of innovation. For a critique of the view of knowledge as a public good, see Boldrin and Levine (2005).

38 More examples and related references are provided by Cabral et al. (2006). The EU project OMC-PTP (2009) provides a list of cases on recent experiences in the EU.

demand-based approach to innovation policy stems from several facts. First, procurement initiatives can make R&D projects to be driven by actual and clearly defined needs of the government. As a consequence, procurement-based innovation policies can target the results of the R&D activity from the final user's perspective, rather than through an "external" evaluation of technical or scientific achievements. Secondly, public demand, especially when aggregated, is able to provide those firms developing new products and processes with an assured market whose size may be as relevant as to cover the risk of large investments typically related with R&D. Thirdly, it has been noticed that, in many cases, the creation of a public market for new products can trigger a "flywheel effect" for the rise of a private market. This spill-over effect is relevant, in particular, for markets characterized by "network effects", i.e. markets for products whose value for customers increases with the number of their users.³⁹ Finally, even beyond stimulating production of innovative goods, the public sector is in a position to set forward (or even switch) the dominant standard for commonly used products and processes.

Box 11: Procurement of R&D

Examples of performance measures and indicators

Metrics R&D1

Existence of a body of regulation governing public procurement of R&D

Metrics R&D2

Percentage of the overall procurement spend earmarked for procurement of R&D

Metrics R&D3*

Number of patents that can be linked to procurement of R&D relative to overall procurement budget for R&D (or, alternatively, overall procurement budget)

The potential difficulty of implementing this metrics consists in finding a clear and direct link between a certain procurement activity (or a set of activities) and patents.

39 See Katz and Shapiro (1985).

Box 12: Procurement of Innovative Products/Services (“First” Procurement)

Examples of performance measures and indicators

Metrics FP1

Number of cases and total value of acquisition of innovative products/services⁴⁰ relative to total procurement spend

Metrics FP2

Most recurrent type of procurement procedure adopted for acquiring innovative products/services among open, restricted and negotiated procedure

Metrics FP3

Easiness for public buyers to engage the market in early consultations (“To what extent is procurement regulation restrictive with respect to early consultations with the market?”)

Box 13: Innovation through Procurement Processes

Examples of performance measures and indicators

Metrics IPP1

Frequency of reference to standards in tender documents

Metrics IPP2

Frequency of use of functional requirements in procurement contracts

40 Innovative products/services are those products/services which are “state of the art” but have not been largely commercialized yet.

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