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Mandatory Requirements in Sustainable Public Procurement: The Economic Perspective

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I. Introduction

In Europe, there has been increasing attention towards the use of public procurement as a tool to reach sustainable goals, especially environmental protection (reduction of deforestation, greenhouse gas emissions, waste, air, water, and soil pollution). From simply allowing the introduction of sustainability criteria in governmental purchases, there has been a progressive shift towards a widespread recommendation to use them. Recently, due also to the fact that the diffusion of SPP practices is not satisfactory and remarkably differs across sectors and EU member countries,¹ the balance has moved forward towards imposing mandatory requirements for contracting authorities in the EU Member States.²

Indeed, the European Green Deal is paving the way for the above shift, intending to transform voluntary green criteria into mandatory requirements: public authorities, including the EU institutions, should lead by example and ensure that their procurement is green. The Commission will propose further legislation and guidance on green public purchasing.³ This adds to the sector-specific mandatory

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¹ See F Testa et al, 'What Factors Influence the Uptake of GPP Practices? New Evidence from an Italian Survey' (2012) 82 *Ecological Economics* 88; A New Circular Economy Action Plan COM(2020) 98.

² W Janssen, 'Shifting towards Mandatory Sustainability Requirements in EU Public Procurement Law: Context, Relevance and a Typology', ch 1 in this volume.; M Andhov and F Muscaritoli, 'Climate Change and Public Procurement: Are We Shifting the Legal Discourse?', ch 2 in this volume.; M Andhov, 'Contracting Authorities and Strategic Goals of Public Procurement – A Relationship Defined by Discretion?' in S Bogojević, X Groussot and J Hettne (eds), *Discretion in EU Public Procurement Law* (Oxford, Hart Publishing, 2019) 134; K Pouikli, 'Towards Mandatory Green Public Procurement (GPP) Requirements Under the EU Green Deal: Reconsidering the Role of Public Procurement as an Environmental Policy Tool' (2021) *ERA Forum* 699; L Mélon, 'More Than a Nudge? Arguments and Tools for Mandating Green Public Procurement in the EU' (2020) 12 *Sustainability* 988.

³ European Green Deal COM(2019) 640.

requirements already in force in EU law, namely, the Energy Star Regulation for IT office equipment, the Clean Vehicles Directive, as well as the two Directives targeting the construction sector (the Energy Performance of Buildings Directive and the Energy Efficiency Directive).

This chapter analyses the theoretical and empirical literature, within the economics discipline, dealing with the use of rules versus discretion in designing and implementing a policy, with a specific focus on public procurement and, in particular, on policies that are aimed at reaching sustainable development goals.⁴ The SPP umbrella covers both environmental and social issues, and international organisations often conduct surveys, propose guidelines and provide examples of best practices in policy reports combining both Green Public Procurement (GPP) and Socially Responsible Public Procurement (SRPP).⁵ Moreover, some countries adopt an integrated approach for ‘strategic’ public procurement, where green and social criteria are included in the same policy packages. However, in our view, for several reasons, it is not particularly rewarding to use the same lens to analyse both GPP and SRPP.⁶

GPP is typically aimed at correcting a negative externality (pollution) or can be used to trigger a positive externality (innovation spillovers), whereas SRPP is responding to a variegated range of issues such as fairness, equity, protection of minorities and disadvantaged groups. Certain activities seem better suited for GPP (defence, energy, health, construction), while SRPP can be applied in principle to all sectors.⁷ Furthermore, the theoretical and empirical literature addressing environmental policies (among which the role of governmental purchases) is much more mature, and the choice of implementing them on a voluntary versus mandatory basis is much more relevant in this context. Last, but not least, differently from SRPP, GPP has been institutionalised by most, if not all, EU countries, through the definition of a strategy, and an action plan, as well as through specific legislative (sometimes mandatory) provisions. In contrast, according to the European Commission, ‘SRPP consists in a variety of different policy approaches. It has been

⁴This approach is complemented by the chapter from a public purchasing perspective, see F Schotanus and R Nicholas, ‘Coercive, Memetic and Normative Influences on the Uptake of Sustainable Public Procurement: An Institutional Perspective’, ch 5 in this volume.

⁵See UNEP, ‘Sustainable Public Procurement. How to “Wake the Sleeping Giant”’, (2021); European Commission, ‘Study on ‘Strategic Use of Public Procurement in Promoting Green, Social and Innovation Policies’ at op.europa.eu/en/publication-detail/-/publication/6a5a4873-b542-11e7-837e-01aa75ed71a1/language-en.

⁶For a broader discussion, see C McCrudden, ‘Using Public Procurement to Achieve Social Outcomes’ (2004) 28 *Natural Resources Forum* 257; M Trybus, ‘Social Considerations through Public Procurement: A Legal Perspective’ in G Piga and T Tatrai (eds), *Public Procurement Policy* (Oxford, Routledge, 2016); K Halonen, ‘Is Public Procurement Fit for Reaching Sustainability Goals? A Law and Economics Approach to Green Public Procurement’ (2021) 28 *Maastricht Journal of European and Comparative Law* 535. For a partially different view, see M Andhov et al, ‘Sustainability Through Public Procurement: The Way Forward Reform Proposals’ (2020) 25 *SSRN Electronic Journal* 1.

⁷However, the European Commission (2019) finds that SRPP is more widespread in sectors such as maintenance of public green spaces, cleaning services, social services, and less commonly used in construction, food and catering, textiles, and transport services.

introduced more recently and is usually carried out on a voluntary basis. Only a few countries have introduced targets for SRPP:⁸

The remainder of the chapter is organised as follows. Section II introduces the economic analysis of regulation, while sections III and IV analyse GPP and SRPP, respectively. Section V discusses a branch of the literature that studies how the different actors involved in procurement (contracting entities, procurement officials, firms, citizens) react to a specific policy. Finally, section VI draws our main conclusions about the pros and cons of using public procurement as a mandatory tool to reach sustainable development goals.

II. Regulation and the Economy

The issue of using public procurement to implement environmental policy or to achieve social goals can be fruitfully analysed by resorting to the broader concept of the role of regulation in the economy. According to the Committee for Economic Development of the Conference Board, the justifications for regulating a market economy are mainly:⁹ 1) market failures (for example, the presence of externalities and asymmetric information); 2) the presence of entry barriers; 3) the desire to guarantee safety (for consumers, for workers) and fairness (inclusion, supplier diversity).¹⁰ While GPP mainly aims at correcting market failures (for example, setting limits to the environmental pollution generated by production activities), SRPP is more linked to justifications 2 and 3 (for example, using set-asides to encourage the participation of minority businesses, or requiring that the contractor will hire a certain number of long-term unemployed or young workers).

Regulation may be more or less stringent, ranging from nudging and ‘soft touch’ interventions to rigid command-and-control measures. Economists generally agree that, from a theoretical standpoint, regulating by allowing for market-based adjustment of prices (for example, using taxes/subsidies¹¹ to discourage/encourage some practices, or issuing cap-and-trade emission permits) should be preferred to regulation that imposes changes in quantities of inputs or outputs (for example,

⁸Study on ‘Strategic Use of Public Procurement’ (n 5) 4. However, it has been noticed that the actual bias in favour of GPP is specific to the Global North of the world, and in particular to the EU. See T Stoffel, C Cravero, A La Chimia and G Quinot, ‘Multidimensionality of Sustainable Public Procurement (SPP) – Exploring Concepts and Effects in Sub-Saharan Africa and Europe’ (2019) 11 *Sustainability* 1.

⁹CED ‘Regulation & the Economy. The Relationship & How to Improve It’ at www.ced.org/reports/regulation-and-the-economy.

¹⁰Someone could argue that this distinction, while useful as a working hypothesis, is not clear-cut. For example, barriers to entry could be included in the broad category of market failures.

¹¹Environmental taxes can be related to the source of emission (carbon tax) or can target the inputs/outputs used in production processes (taxes on water usage, on packages, on pesticides, fuel excises). These tools, however, are not always compliant with EU State aid rules.

setting emission standards).¹² However, the available empirical evidence on the relative merits of different types of regulation is very scant.

The first issue relates to the *effectiveness* of regulatory interventions, that is, to the actual impact of the rule in reaching the declared goal. A second issue relates to the *efficiency* of regulation, that is, to the costs of its implementation, as compared to other regulatory alternatives targeting the same final goal.

Some recent evidence shows that the fall in air pollution emissions from US manufacturing in the years 1990–2008 is mainly due to changes in environmental regulation.¹³ There have also been changes in productivity (allowing more output by using fewer resources), as well as changes in trade relations (implying that some polluting activities have been delocalised abroad or substituted with imports from countries like China and Mexico). However, the econometric estimates clearly show that the main reason for the reduction of emissions leads back to environmental regulation, which implied a doubling of the implicit pollution tax that US manufacturers had to face.

Beyond investigating the effect of environmental regulation on reducing emissions or improving energy efficiency, it is important to understand the impacts on different types of firms, as well as the total impact on actual and future competition. Theoretically, regulation can create an advantage for large firms, discourage entry and raise market concentration.¹⁴ This has important implications for interventions such as tradable permits, extended producer responsibility, and green labels.

A topic that has been highly addressed in the empirical literature is the nexus between environmental regulation and productivity. Dozens of studies tried to test the so-called Porter hypothesis, according to which environmental regulation can stimulate innovations and productivity increases that can more than compensate for the costs of complying with green policies.¹⁵ A meta-analysis of 107 empirical studies concludes that: ‘strict but flexible (i.e. market-based) environmental regulations induce innovation and over time increase country-level competitiveness.’¹⁶ Recently, a cross-country study provided evidence in favour of the Porter hypothesis, since a more stringent environmental regulation is found to positively impact productivity, especially for highly ICT-intensive countries (Germany, France,

¹² A cap-and-trade system sets a maximum level of pollution and distributes emission permits to firms. Firms can trade emission permits, and a price on pollution is created by the usual demand and supply mechanism.

¹³ JS Shapiro and R Walker, ‘Why is Pollution from US Manufacturing Declining? The Roles of Environmental Regulation, Productivity and Trade’ (2018) 108 *American Economic Review* 3814.

¹⁴ A Heyes A, ‘Is Environmental Regulation Bad for Competition? A Survey’ (2009) 36 *Journal of Regulatory Economics* 1.

¹⁵ M Porter and C van der Linde, ‘Toward a New Conception of the Environment-Competitiveness Relationship’ (1995) 9 *Journal of Economic Perspectives* 97.

¹⁶ MA Cohen and A Tubb, ‘The Impact of Environmental Regulation on Firm and Country Competitiveness: A Meta-Analysis of the Porter Hypothesis’ (2018) 5 *Journal of Association of Environmental Resources Economists* 371.

the Netherlands, and Sweden).¹⁷ Most interestingly, even if market-based policies (taxes, trading schemes, renewable certificates, energy efficiency certificates, feed-in-tariffs, deposit-refund schemes) seem to play the main role in fostering productivity improvements, a positive effect emerged also for non-market-based policies (standards, R&D subsidies).

While economists are, with some exceptions, rather sceptical about the role of mandatory regulation, especially of the command-and-control form, management scholars and business strategists are more positive about the effects of environmental regulation in shaping the environmental strategies and performance of firms. A review of the literature on the effects of both mandatory regulation (ie, the US Clean Air Act and the Clean Water Act) and voluntary programmes (ie the Sustainable Forest Initiative, the ISO certifications, the EU Eco-Management and Audit Scheme – EMAS) on firms' strategies and competitiveness concludes that mandatory regulation is generally effective in reducing pollution, increasing innovation, and spurring the adoption of greener technologies. However, the study finds that the effects of voluntary regulation are more mixed and, in general, disappointing.¹⁸

A key distinction between the regulation of the private sector and the regulation of the government (for example, public procurement regulation) is that the former can well empower public officials (employees of regulatory authorities, inspectors, politicians), who can extract bribes from firms in exchange of favours, while the latter typically set limits to the discretionary power of bureaucrats. This difference is crucial for understanding and evaluating the effects of mandatory versus discretionary rules. Mandatory rules are typically useful to fight corruption practices, while discretionary rules are more suitable in contexts where corruption is not the main problem and public sector capacity is high.¹⁹

The above discussion about the role and the impact of regulation on the economy is a useful starting point. In the next sections, we will tackle the more specific issue of the role and impact of public procurement regulation, to understand what economists have to say about the effectiveness and the efficiency of SPP policies such as GPP and SRPP. In that respect, the fact that there is a high number of alleged social, environmental, and economic benefits that the proponents of SPP simultaneously aim to reach, represents a serious barrier to a general evaluation of the pros and cons of a specific GPP or SRPP policy. Empirical economists typically perform data-intensive analysis and concentrate, at the very maximum, on two to three measurable effects (for example, the effectiveness of a policy in reducing long-term unemployment or CO₂ emissions), and leave the other potential outcomes (many of which are very hard to measure) open to qualitative speculation.

¹⁷ R De Santis, P Esposito and CJ Lasinio, 'Environmental Regulation and Productivity Growth: Main Policy Challenges' (2021) 165 *International Economics* 264.

¹⁸ JA Aagon-Correa, AA Marcus and D Vogel, 'The Effects of Mandatory and Voluntary Regulatory Pressures on Firms' Environmental Strategies: A Review and Recommendations for Future Research' (2020) 14 *Academy of Management Annals* 339.

¹⁹ E Bosio et al, 'Public Procurement in Law and Practice' (2022) 112 *American Economic Review* 1091.

III. Is Green Public Procurement Supported by Theory and Empirical Evidence?

GPP is a particular instrument of environmental policy. Since the government is a big buyer²⁰ and a big polluter.²¹ In many sectors, using environmentally friendly purchasing behaviours can accomplish several goals. On the one hand, it can reduce environmental impact directly, while on the indirect side, it can set an example to citizens and the private sector.²² According to the OECD

GPP policies are a reflection both of increased concern on the part of OECD governments about the effect that their purchasing decisions have on the natural environment, and a belief that the public sector should introduce practices which are consistent with those that it recommends to other actors in the economy, such as private firms and households.²³

Environmental criteria can be introduced at various stages of the procurement process. They can be used in the design of technical specifications of products, works, or services (energy efficiency or emission standards, recyclability after use, fraction of recycled material, bio-based products, eco-labels, and certifications). They can act as selection criteria for suppliers (for example, requiring bidders to have an environmental management system). Moreover, they can enter as award criteria (contracts awarded through the most economically advantageous tender, where quality is matched with financial aspects) or as contract clauses specifying how the work or service will be performed (for example, the contractor must take care of product collection and recycling when the product becomes waste).²⁴

The use of environmental criteria in public procurement is not supported by all academics and by all procurers. This is because GPP can well lead to an increase in procurement costs, can distort and restrict competition in a non-desirable way, and often implies an amount of discretion on the part of the procurer that can be abused and lead to fraud and distortions. This is especially true when there are serious monitoring and measuring problems, which make it difficult to assess

²⁰ Defence, construction, maintenance, transport equipment, energy, and healthcare are sectors in which the government's market share is particularly high.

²¹ For an analysis of the German Government greenhouse gas footprint, see O Chiappinelli, F Gruner and G Weber, 'Green Public Procurement: Climate Provisions in Public Tenders can Help Reduce German Carbon Emissions' (2019) 51/52 *DIW Weekly Report* 433. For an estimation of Finland's carbon footprint, see A Nissinen and H Savolainen, 'Carbon Footprint and Raw Material Requirement of Public Procurement and Household Consumption in Finland' at helda.helsinki.fi/handle/10138/312377.

²² By 'buying green', the government avoids being associated with polluting activities or other unlawful behaviour, therefore reducing the risks to incur public criticism and public outrage.

²³ N Johnstone and K Erdlenbruch, 'Introduction' in OECD, *The Environmental Performance of Public Procurement: Issues of Policy Coherence* (OECD Publishing, Paris, 2003) 9.

²⁴ In addition, environmental goals can be reached also by selecting the procurement model (for example, buying an external service, such as a canteen service, instead of providing in-house food for employees or school kids). Finally, for contracts below EU thresholds, it would be possible to intervene in the phase in which bids are invited (eg. only invite environmentally friendly firms).

bids and manage contracts. On the other hand, if properly designed, mandatory criteria could well reduce discretion.

However, some procurement policies can be successful in reaching environmental goals together with bringing a reduction in government purchasing costs. Providing information and training on green products, promoting greater competition between green and brown products, or the use of Life Cycle Costing (LCC) methodologies, are examples of *win-win* policies that provide revenue (cost savings) for the government similar to other market-based instruments such as taxes and trading permits.²⁵

More controversial are, instead, *win-lose* policies, where environmental benefits are reached at the expense of higher overall costs. For example, price preferences for green products (ie, products with eco-labels), or programmes affecting quantity rather than price (by imposing requirements such as shares of renewable sources, shares of recycled content, shares of organic food, efficiency standards for energy-using devices, less polluting manufacturing technologies), often imply higher costs for the government. In that respect, they are similar to market-based instruments such as subsidies.

The economic theory addressing sustainable public procurement is very limited. The seminal formal analysis by Marron is a useful starting point to analyse the effectiveness²⁶ of *win-lose* interventions.²⁷ Unlike taxes, subsidies, or emission standards, that apply to all firms active in a specific market, GPP applies only to firms willing to work with the government. It is important, therefore, to go beyond the impact on public purchases only and try to understand the effect of GPP in the private market. In that respect, the green product purchased by the procurer can simply be a substitute for a brown product (substitution effect), or it also can bring a reduction in the production of the brown good and the use of less environmentally harming technologies in a specific market (transformation effect). This means that the private market could in principle reinforce or counteract the change in government purchasing. If the government policy is successful at reducing the costs of purchasing green products (eg, by encouraging innovation or by enabling scale economies)

²⁵ Take one example, Indian Railways saved US\$7 million per annum by replacing conventional light bulbs with energy-efficient ones. Despite the high initial costs (up to 6 times the cost of incandescent bulbs), the LCC assessment revealed the economic benefits of the green purchase. See UNEP, 'Sustainable Public Procurement' (n 5).

²⁶ In other chapters of this book the term effectiveness means the capacity of a specific policy to increase the SPP uptake. However, in our chapter, effectiveness relates to the impact of the policy on the declared goal (for example, the reduction of pollution for a GPP policy, or the increase of the share of disadvantaged firms/workers for an SRPP policy). A policy can well be effective in increasing the share of SMEs participating in tenders, or the share of clean vehicles the government purchases, but can still be ineffective in reaching the declared goal (ie, helping SMEs to grow in the long term, or increasing the share of clean vehicles that are circulating in a country).

²⁷ See DB Marron, 'Buying Green: Government Procurement as an Instrument of Environmental Policy' (1997) 25 *Public Finance Review* 285; DB Marron, 'Greener Public Purchasing as an Environmental Policy Instrument' (2004) 3 *OECD Journal on Budgeting* 70.

or at increasing market acceptance of green products, there could be the desired reinforcing effect. However, GPP could also lead to private purchasing becoming browner if it results in higher prices for green products or lower prices for brown products, through supply-and-demand responses. The formal analysis by Marron shows that, for GPP to be effective in switching consumption from brown to green products, the following three requirements must be met:

- 1) The procurer is a big buyer in the market, ie, it buys a relevant share of the total (green and brown) production.
- 2) The supply is price elastic, ie, firms react intensively to changes in the price at which they can sell the product/service.
- 3) The private demand is price inelastic, ie, private consumers react slowly to changes in the price at which they can buy the product/service.

Marron's analysis is essentially static and does not include dynamic aspects such as the development of green technologies across time. To the extent that the government can set the example, steer the market, and accelerate the development of green technologies, it could be justified to bear higher costs in the initial years, which should be counterbalanced by lower costs in a future in which, thanks to scale economies, learning by doing and spillover effects, green products/services will become cheaper.

Other studies extended the above theoretical analysis.²⁸ As far as effectiveness is concerned, the arguments developed by Marron suggest that one has to evaluate case by case by including in the picture the size of government purchases, as well as the reaction of the firms and private consumers. However, the fact that GPP is indeed able to produce a positive impact on the environment (effectiveness) is only a necessary but not sufficient condition, and the costs associated with implementing the policy must be included in the picture (cost-effectiveness). In that respect, the general view is that the costs of GPP are probably higher than other alternatives, such as market-based instruments like taxes on emissions and tradable permits. Finally, GPP is often used to reach multiple environmental objectives (for example, in the case of food provision, the increase in consumption of organic food and the increase in the organic agricultural area in a specific region or, for the case of cleaning services, the use of vehicles with low emissions to reduce air pollution and the use of green chemicals to reduce water pollution). However, pursuing a series of linked objectives can well hamper the governing of the intended environmental outcome. In other words, the well-known Tinbergen rule that one instrument (ie, public procurement) should be used to reach one objective only can act as a warning for over-optimistic policymakers and procurement officers.

²⁸ S Lundberg and PO Marklund, 'Green Public Procurement as an Environmental Policy Instrument: Cost Effectiveness' (2013) 4 *Environmental Economics* 75; S Lundberg, PO Marklund and E Strömbäck, 'Is Environmental Policy by Public Procurement Effective?' (2016) 44 *Public Finance Review* 478.

We think that the above theoretical analysis is informative and should be duly taken into consideration in devising policies that target several goals and in evaluating the pros and cons of SPP as compared to other forms of regulation of the sector. However, in some cases, different environmental goals or a mix of green and social goals can be complementary. One example is the case of organic food catering services, which can improve the health of consumers and at the same time provide job opportunities for small (and possibly local) firms. Another is buying from firms producing low emissions, which can also create positive spillovers for the living conditions of local communities.

Moreover, the direct comparison of GPP with other environmental policies could be somehow misleading, and we believe that GPP can be better analysed as a component of a policy mix. In that respect, it can be useful in areas in which environmental regulation is absent or insufficient, and to stimulate innovation.²⁹ It is important also to understand if GPP policies complement or clash with other policies:

For instance, if a GPP programme which mandates particular technological or performance standards is introduced against a regulatory background which is also based upon the application of technology-based or performance-based standards, then it is important that selection criteria in the GPP programme are consistent with these standards. In most cases they will be somewhat more stringent than standards applied in the regulatory framework. However, they should not be so ambitious as to result in a disjuncture in the market, and nor should they be so weak as to legitimate the status quo.³⁰

A. Is GPP Empirically Supported?

According to the above theoretical studies, we can conclude that understanding the effectiveness and cost-effectiveness of GPP is for a large part an empirical task. Unfortunately, the empirical literature on the effects of specific GPP policies is rather scant.³¹ Moreover, most studies are limited to evaluating the effect of a policy

²⁹ Marron is rather critical of the potential benefits of GPP. However, he suggests that it can be effective when it focuses on the development of greener products and technologies, or when a public purchase can serve as a testing ground in some pilot projects. Similarly, GPP is more likely to generate social gains when addressing issues poorly addressed by existing regulations. See DB Marron, 'Greener Public Purchasing as an Environmental Policy Instrument' (2004) 3 *OECD Journal on Budgeting* 70.

³⁰ Johnstone and Erdlenbruch, 'Introduction' (n 23) 13. 'Similarly, GPP programmes can be introduced against a background of economic instruments such as emission taxes or tradable permits. In some cases, this may undermine the benefits of the application of market-based instruments. For instance, if public authorities and state enterprises have to meet certain performance standards under the GPP programme, this may mean that they have lower permit holding than would otherwise be the case, thus releasing permits onto the market, driving down their price, and reducing incentives for improved environmental performance against private firms.'

³¹ W Cheng et al, 'Green Public Procurement, Missing Concepts and Future Trends – A Critical Review' (2018) 176 *Journal of Cleaner Production* 770.

on the uptake of GPP practices and the behaviour of bidders.³² Unfortunately, they rarely take a step further, most relevant from an economic point of view, to try to measure its environmental impact in terms of reduction of GHG emissions, increase in energy efficiency, reduction of pollution, etc.

Recent evidence points to a positive impact of an organic food policy implemented by Swedish procurement agencies that, by buying increasing shares of organic food, were driving the conversion of farmland towards organic agricultural practices.³³ Interestingly enough, a positive, and somewhat larger, effect is found also for a traditional market-based policy targeting the same objective, that is, giving subsidies for organic production, which applies directly to agricultural firms, and not, indirectly, through government purchases.

A positive effect of GPP is also found in the construction sector in California.³⁴ The municipalities that implemented green building policies for new construction, by acting as large buyers, had the effect of promoting and accelerating the diffusion of green building standards in the private sector.

Moreover, there is evidence of the estimated impact of the CO₂ Performance Ladder, a stage certification scheme for energy and CO₂ management, in reducing carbon dioxide emissions in the Netherlands.³⁵ The certification scheme has been developed by ProRail, a Dutch state-owned company responsible for network infrastructure management on the Dutch railway network. The firms can obtain the certification with different levels of achievement of optimal CO₂ management (from 1 to 5) and, due to the use of Most Economically Advantageous Tender (MEAT) as award criteria, a higher certificate level can help a bidder to win the contract.

Besides environmental improvements, GPP could also be beneficial to other aspects of industrial development. A recent study uses Tenders Electronic Daily to extract a sample of German firms that were awarded a governmental contract with included additional environmental award criteria.³⁶ The analysis shows that, as compared to firms that were not winning green procurement awards, the winners were innovating more in the subsequent years, and this suggests that GPP is effective as a demand-side innovation policy tool. The results are particularly strong

³² S Lundberg et al, 'Using Public Procurement to Implement Environmental Policy: An Empirical Analysis' (2015) 17 *Environmental Economics and Policy Studies* 487; M Amann et al, 'Driving Sustainable Supply Chain Management in the Public Sector: The Importance of Public Procurement in the EU' (2014) 19 *Supply Chain Management: An International Journal* 351.

³³ H Lindstrom, S Lundberg and PO Marklund, 'How Green Public Procurement Can Drive Conversion of Farmland: An Empirical Analysis of an Organic Food Policy' (2020) 172 *Ecological Economics* 106622.

³⁴ T Simcoe and MW Toffel, 'Government Green Procurement Spillovers: Evidence from Municipal Building Policies in California' (2014) 68 *Journal of Environmental Economics and Management* 411.

³⁵ MG Rietbergen and C Blok, 'Assessing the Potential Impact of the CO₂ Performance Ladder on the Reduction of Carbon Dioxide Emissions in the Netherlands' (2013) 52 *Journal of Cleaner Production* 33.

³⁶ B Krieger and V Zipperer, 'Does Green Public Procurement Trigger Environmental Innovation?' (2022) 51 *Research Policy* 104516.

for the product (as compared to process) environmental innovations and SMEs (as compared to large firms).

The empirical studies reported above are good examples of scientifically sound public policy analysis and evaluation. However, it is difficult to generalise their results, because they refer to specific sectors (construction, food, cleaning services), different countries, and, most importantly, they analyse only one or two specific sustainability goals. There are several difficulties in evaluating the environmental effectiveness, cost-effectiveness, and dynamic incentives (for the development and diffusion of environmentally preferable products and processes), as well as the soft effects (changes in awareness and attitudes of the private market and consumers/citizens) of specific GPP policies. A study covering six programmes in six different countries, among which three are based on mandatory requirements, is a good illustrative example. The analysis was only able to evaluate, partially, the environmental performance of the projects, while the lack of data and conceptual difficulties represented serious impediments to the performance evaluation exercise.³⁷

The available empirical literature is far from reaching the minimal critical mass that would allow drawing some robust conclusions about the impact of GPP. Hopefully, thanks also to the increased availability of data, more solid quantitative research will come to bridge the gap.

Our main conclusion is to treat GPP as a sector-specific policy, giving priority to the most polluting sectors. At the sectoral level, it is relatively easier to evaluate if the government is a big buyer,³⁸ and how suppliers and consumers would react to the policy. The OECD submitted a questionnaire to Member countries to understand their different views on improving the environmental performance of public procurement.³⁹ For what concerns the effectiveness of GPP, the products and services for which environmental benefits are perceived to be highest are paper and packaging, vehicles, energy services and construction, while the sectors and services in which green purchasing can be cost-effective are heating appliances, IT equipment, energy services, and vehicles. A more recent study identified as priority products for SPP (where priority was justified by several factors, such as volume of public expenditures, cost-effectiveness, the existence of eco-labels, market influence of the contracting authority) office IT, paper and stationery, vehicles, cleaning, furniture, construction.⁴⁰

³⁷ R Siemens, 'A Review and Critical Evaluation of Selected Greener Public Purchasing Programmes and Policies' in OECD, *The Environmental Performance of Public Procurement: Issues of Policy Coherence* (OECD Publishing, Paris, 2003).

³⁸ For example, the healthcare sector is more promising than cleaning products, where the government share of purchases, typically, is not large.

³⁹ OECD 'Improving the Environmental Performance of Public Procurement: Report on Implementation of the Council Recommendation' (OECD Publishing, Paris, 2007); OECD, 'Improving the Environmental Performance of Public Procurement: Report on Implementation of the Council Recommendation' (2007) 7 *OECD Papers* 1.

⁴⁰ UNEP (n 5).

IV. Is Socially Responsible Public Procurement Supported by Economic Theory and Empirical Evidence?

While North-American countries, Australia and New Zealand share a long tradition of preferential public procurement policies such as affirmative action and set-aside programmes trying to promote supplier diversity and employment, in Europe preferential programmes are less popular, since they can be used to circumvent the well-established principles of efficiency (value for money), openness, non-discrimination.⁴¹ However, there are alternative instruments to set asides that can be used to increase supplier diversity or to create jobs for categories of vulnerable workers. For example, disadvantaged firms can improve their chances of being awarded the contract if social considerations are pondered under a MEAT award criterion, if the contract is divided into reasonably small lots, or if contract clauses promote the use of subcontracting. Similar to the use of life cycle costing methods in green procurement, contracting entities can implement tendering procedures that take into account social considerations, and compute the long-run cost-benefit ratio for the whole economy. Similar to eco-labels, labels and certifications (such as the ILO convention for labour standards, or the Ethical Trading Code) that attest that the bidder is not violating ethical principles can be used at the qualification stage.

Instead of promoting SRPP, especially in its mandatory form, the government could use criminal law, labour law, tax law, or state-aids to reach its desired social goals.⁴² While the same criticism emerged concerning the use of GPP, one has to recognise that, in the case of socially responsible purchases, the opponents and detractors bring arguments that are much more pregnant. For example, typical objections are the multi-faceted nature of social considerations and the fact that it is more difficult to prove the social effectiveness and the cost-effectiveness of such policies. To reduce the degree of fragmentation, some scholars suggest distinguishing *hardcore* social objectives, such as respect for human and labour rights, from the other goals of promoting inclusion and supplier diversity.⁴³ We agree with this operational categorisation, and we believe that mandatory requirements should mostly focus on the former group of sustainability policies. Finally, technical specifications and contract performance conditions should be the main tools to be used, as compared to other instruments such as qualification requirements

⁴¹ However, Art 20 of the Classic Directive allows contracting authorities to reserve the right to participate in public procurement tenders to sheltered workshops favouring disabled people and other minorities and disadvantaged groups (young workers, long-term unemployed, immigrants, refugees).

⁴² For reference see Trybus (n 6). For a recent example of a proposed law, see Proposal for a Corporate Sustainability Due Diligence Directive COM(2022) 71.

⁴³ C Cravero, 'Promoting Supplier Diversity in Public Procurement: A Further Step in Responsible Supply Chain' (2018) 2 *European Journal of Sustainable Development* 1.

and award criteria. Intervening at the early or late stages of the procurement process is reducing the risk of violating the primary goals of procurement, while the qualification and awarding stages are more likely to distort the competitive process.⁴⁴

A. Is Socially Responsible Public Procurement Empirically Supported?

Within the field of economics, the theoretical literature that specifically investigates SRPP is practically non-existent, and often the same theoretical papers reviewed in section III, which have been developed in the context of GPP, are used to discuss the role of sustainable public procurement in general. In a similar vein, the empirical literature on the effectiveness and the efficiency of SRPP is very scant, mostly concentrates on US affirmative and set-aside programmes, and has a limited focus on evaluating the impact of specific policies on some measures of inclusion and supplier diversity.⁴⁵

An assessment of the impact of affirmative action programmes that try to increase the utilisation of minority business enterprises (MBE) as well as women-owned enterprises (WOE) in US highway procurement pointed out the presence of a positive impact only for MBE.⁴⁶ Similarly, the impact of Women-Owned Small Business (WOSB) certification in increasing bid frequency and bid success of SMEs in US federal procurement contracts is non-significant, meaning that certified WOSB, as compared to male-owned firms and women-owned firms, were not more likely to participate in (and to win) government contracts.⁴⁷ However, there are also studies pointing out positive effects on the uptake of both GPP and SRPP. One analysis shows, for their sample of contracts awarded in Austria, Germany, the Netherlands, and the UK, that considering socially responsible goals in public procurement has a stronger influence on which firms win, compared to GPP practices.⁴⁸ In a similar vein, another study shows for Slovakia, Czech Republic, Hungary, and Poland that the inclusion of sustainability aspects in the evaluation criteria had the effect of increasing SMEs' bidding, as well as the probability for

⁴⁴ M Trybus, 'Beyond Competition and Value for Money: Corporate Social Responsibility in Public Procurement' (2020) 8 *Kilaw Journal* 217. However, sometimes, a combination of a requirement (set at such a level that there is sufficient competition) and an award criterion (to reward the most social suppliers), if properly devised, can be effective.

⁴⁵ Studies on the impact of procurement policies promoting the participation of SMEs are, instead, more common, but are not included in our selective review of empirical papers.

⁴⁶ J Marion, 'Affirmative Action and the Utilization of Minority- and Women-Owned Businesses in Highway Procurement' (2011) 49 *Economic Inquiry* 899.

⁴⁷ B Orser, A Riding and J Weeks, 'The Efficacy of Gender-based Federal Procurement Policies in the United States' (2019) 53 *Small Business Economics* 491.

⁴⁸ Amann et al (n 32).

SMEs to win the contract, but the effect was higher in the case of inclusion of social aspects.⁴⁹

While the above papers focus on effectiveness in terms of uptake of socially responsible practices (participation of disadvantaged firms in tenders, probability of winning procurement contracts), some studies try to evaluate the impact of SRPP policies on the winning firms and, in general, on the local economy. Results are not encouraging. For instance, a study tracked a sample of more than 4,000 minority US MBEs that were awarded procurement contracts.⁵⁰ It found that the probability for them to go out of business after four years was higher as compared to similar firms that were not working with the state, especially when a significant share of their revenue was due to sales to the local government. Another study uses spending and survey data of the Metropolitan Pier and Exposition Authority in Chicago and concludes that ‘preferential procurement policies often miss their objectives, achieving perverse outcomes such as minimal assistance to minority business enterprises and negligible local economic development impacts.’⁵¹

V. Rules versus Discretion: The Behaviour of the Different Actors

The arguments developed in the previous sections were implicitly assuming that, once a law has been enacted, procurement agencies at centralised and at different decentralised levels will duly implement it, by using competent and diligent procurement officers, with no frictions and costs associated with its enforcement.

However, to perform a complete evaluation of the pros and cons of mandatory requirements, one has to enter into the picture the presence of inefficient and corrupt public officers, and the fact that contracting authorities, especially at the local level, can suffer from a serious lack of competence. For example, there is evidence that Italian contracting entities were buying standardised goods at very different prices.⁵² Higher prices were mostly due to inefficiency (‘passive waste’ in government spending), while corruption (active waste) was, quite surprisingly, playing a minor role.⁵³ Furthermore, evidence for US public works and services

⁴⁹ P Nemeč, M Kubak and P Džupka, ‘The Transition of the Visegrad Countries Toward Sustainable Public Procurement’ (2021) 59 *Eastern European Economics* 487.

⁵⁰ T Bates and D Williams, ‘Do Preferential Procurement Programs Benefit Minority Business?’ (1996) 86 *American Economic Review* 294.

⁵¹ T Bates, ‘Utilizing Affirmative Action in Public Sector Procurement as a Local Economic Development Strategy’ (2009) 23 *Economic Development Quarterly* 180, 180.

⁵² O Bandiera, A Prat and T Valletti, ‘Active and Passive Waste in Government Spending: Evidence from a Policy Experiment’ (2009) 99 *American Economic Review* 1278.

⁵³ While the standard solution to active waste calls for stricter rules and external controls, such strict policies are not appropriate and can instead produce a detrimental effect when inefficiency and lack of professionalism are the key problems faced by procurers.

(more complex procurements than purchasing standardised goods), shows that bureaucratic competence is a key characteristic for selecting the best contractor, and a higher competence of the contracting authority is associated with low time delays, low-cost overruns and less renegotiation.⁵⁴ An Italian study finds that facing a centralisation reform, contracting authorities, instead of being fully aligned, were trying to react in several ways. They anticipated purchases, divided contracts into smaller lots (to remain within the threshold below which centralisation was not mandatory) and aggregated into the smallest types of centralised purchasing bodies, when given the possibility to do so. Most importantly, these unintended effects and distortions partially offset the expected benefits of centralisation.⁵⁵

A recent analysis of the link between public procurement laws, public procurement practices, and outcomes for 187 countries provides key insights into the behaviour of the different actors.⁵⁶ It finds a clear positive relationship between stricter laws (governing issues such as transparency, competition, exclusion of bidders and integrity of contracts) and procurement practices (that can be aligned to the laws or be more or less stringent), and a positive relationship between practices and outcomes (competition between bidders, time delays, cost overruns, product quality). However, a positive link between laws and outcomes emerged only for countries with the low institutional quality and low public sector capacity. The results suggest that properly motivated bureaucrats need more discretion and require fewer rules: 'Countries with weak bureaucracies need strict laws to regulate them: countries with strong bureaucracies can lay off a little.'

Finally, it is important to understand if and to what extent procurement policies such as centralisation, anti-corruption and promoting sustainable purchases are endorsed by citizens. In that respect, a study using data from a Special Eurobarometer survey conducted on more than 25,000 respondents living in 27 EU countries found that EU citizens were in general in favour of SPP practices, even when they were associated with higher purchasing costs.⁵⁷

From the above empirical evidence, we can conclude that, in evaluating if conducting policies by using more rules or more discretion, it is not only important to look at effectiveness and efficiency. It is crucial to understand the characteristics of the public procurement environment and culture, and how different stakeholders (contracting authorities, public officials, firms working with the government, firms not working with the government and, ultimately, citizens) react to them.

⁵⁴ F De Carolis et al, 'Bureaucratic Competence and Procurement Outcomes' (2020) 36 *Journal of Law, Economics, and Organization* 537.

⁵⁵ F De Carolis, 'Procurement Centralization in the EU: The Case of Italy' (2018) *CEPR Discussion Paper* 12567.

⁵⁶ Bosio et al (n 19).

⁵⁷ S Keulemans and S Van de Walle, 'Cost-Effectiveness, Domestic Favouritism and Sustainability in Public Procurement' (2017) 30 *International Journal of Public Sector Management* 328.

VI. Conclusion

Mainstream economics relies largely on the capability of changes in prices to organise markets efficiently, so it is not surprising that there is some scepticism about the possibility to reach strategic goals using public procurement as an instrument, especially in a command-and-control form. Traditional market-based instruments, such as subsidies, taxes, and emission trading permits, apply to all firms in a market (and not only to the subset of firms that are selling, or plan to sell, to the government), and are therefore seen more favourably.

Along this line, some theoretically argue that GPP is not the most cost-effective instrument ‘in terms of leading to emissions being reduced at least cost to society’.⁵⁸ Others come to the same conclusion, for both GPP and SRPP: ‘Entrusting the public procurement system with the task of achieving social, environmental and innovation-related objectives is ineffective.’⁵⁹ However, this view is not univocally shared by all economists. Some proponents argue that: ‘GPP holds great potential to decarbonise the economy, also relative to other decarbonization policies that are currently being implemented or discussed.’⁶⁰

Moreover, even the opponents to the use of SPP recognise that in some circumstances (high market share of government purchases, high price elasticity of supply, and low price elasticity of private demand) GPP can be effective in reaching the desired goal. In addition, to the extent that market failures are such that the government is buying inefficiently (at a higher cost) and in a way that damages the environment, some procurement strategies (providing information and training on green products, promoting competition between brown and green products, using life-cycle costing methods) can act as *win-win* policies, to the benefit of both government expenditures and the environment. An example of ‘quick win’ mandatory policies that can be implemented is the use of life-cycle costing techniques, MEAT as the award criteria, and eco-labels as technical requirements.⁶¹ Finally, GPP can be applied when the government desires to develop greener products and technologies, as well as when there is urgency, that is, an urgent need to quickly reduce hazardous pollutants.⁶²

⁵⁸ Lundberg et al (n 28).

⁵⁹ S Saussier and J Tirole, ‘Strengthening the Efficiency of Public Procurement’ (2015) 22 *Notes du conseil d’analyse économique* 1.

⁶⁰ O Chiappinelli and V Zipperer, ‘Using Public Procurement as a Decarbonisation Policy: A Look at Germany’ (2017) 49 *DIW Economic Bulletin* 523.

⁶¹ The State of Berlin computed the life-cycle costs of a selected list of green products, and found for ten product categories (computers, multifunction devices, copy paper, refrigerators, indoor lighting, cleaning supplies, buildings, flooring, street lighting and vehicles) cost savings as compared to conventional products. High costs emerged, instead, for ‘greener’ dishwashers, textiles, electricity, waste treatment, and construction machinery.

⁶² A recent example of a virtuous use of public procurement to spur innovation comes from the recent Covid-19 pandemic. The presence of a worldwide massive public demand pushed pharmaceutical companies to engage in an unprecedented innovation race and accelerated the development of various efficacious vaccines.

As to the specific issue of mandatory versus discretionary rules, again, mainstream economics is generally in favour of the latter, which is more flexible. This relies on the implicit assumption that contracting authorities can make the correct decision, implement it, undertake efficient monitoring and ex-post evaluation. However, organisations can be highly inefficient and procurement officers can lack the required competence or can be corrupted. To the extent that those distortions are widespread, mandatory rules can be more effective in reaching the desired goal. More generally, the choice between voluntary or mandatory policies should be adapted to the specific sector as well as to the local conditions (country, region, municipality): ‘A voluntary system leverages on awareness-raising of practitioners as well as “peer pressure” and competition among organisations to excel, while a mandatory system relies on compliance and sanction mechanisms.’⁶³ We believe that, among the typologies of mandatory GPP requirements, procedural mandatory requirements, such as ‘comply or explain’ are particularly promising, since they leave some degree of freedom to contracting authorities.

Finally, while sustainable public procurement encompasses both GPP and SRPP, we argue that, for this analysis, they should be treated separately. In the context of SRPP, issues such as respect for human rights, health, and safety, fair working conditions, and ethical trade, should be made mandatory by law, for both private firms and procurement entities, as much as possible, using product-specific legislation to regulate the products or the producers. Conversely, other sustainability aspects such as gender inclusivity (ie, protection of women-owned businesses), minorities (immigrants, racial and ethnic groups), and other disadvantaged groups (disabled, veterans, refugees, long-term unemployed, young workers) promote social inclusion and supplier diversity and can be better tackled, in some circumstances, by setting targets (ie, using a mild form of mandatory requirement). However, we believe that intervening by giving guidelines, support, and incentives (ie, operating within a voluntary framework) could represent in most cases a better strategy.

In conclusion, as is often the case, economics can be of help in designing the optimal policy (even if it is a second-best policy according to criteria such as cost-effectiveness) and can be very useful in trying to understand, case by case, the effects of a specific procurement policy. However, the decision to go towards more stringency in GPP and/or in SRPP should be mainly a political one and should consider not only costs, but also moral, legal, and societal obligations to protect the environment and to let citizens live in a more inclusive society.

⁶³European Commission, ‘Study on “Strategic Use of Public Procurement”’ (n 5) 99.

