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Green Public Procurement v.s. Environmental Taxation: implications for the EU-MENA environmental policy*

by Vera Danilina and Federico Trionfetti

in collaboration with : 

1. Summary

Environmental policies are among the priorities of the UN agenda and figure highly in national and international policy agendas. This brief focuses on environmental taxes and green public procurement (GPP). These two environmental policy instruments differ in political viability and in the impact they have on consumers and producers. The brief provides a comparative analysis of their efficiency in closed and open economy and reveals the opportunities and threats of (un)harmonised environmental policy across countries. The results allow to consider particular implications for the collaboration of EU-MENA countries.

2. Introduction

In the last decades environmental policies have developed in different directions and have generated intense debates on their ecological effectiveness and economic consequences. The various environmental policies may be grouped in three main categories (Marron, 2003): *direct or command-and-control regulation* (e.g., technological standards and certification), *market-based instruments* (e.g., emission quotas and taxes, subsidies, tradable permits), and *disclosing approaches* (e.g., environmental labelling and promotional programmes).

This policy brief is focused on the comparison between GPP and environmental taxation. Why these two policy instruments? First of all, because they belong to alternative approaches to regulation that feature mandatory vs. voluntary participation and direct vs. indirect influence. Moreover, according to the OECD Database on Policy Instruments for the Environment (<https://pinedatabase.oecd.org/>), environmental taxes/fees/charges are widely represented in the key environmental policy instruments toolkits of different countries. Thus, in the EU-28 they account from 30-50% (UK, Belgium, Italy, Denmark) to 60-80% (Germany, France, Norway) and even to 80-100% (Spain, Liechtenstein) of all environmental policy instruments in use. In the Middle East and North Africa (MENA) region this share varies from 64% (Israel) to 100% (Egypt, Tunisia). Accordingly, environmental tax can be considered as one of the most widely used policy instruments. The expansion of GPP is much more modest: only in such countries as Czech Republic, Denmark, and Slovak Republic it can be considered as one of the key environmental policy instruments

(OECD, 2019). At the same time, GPP has been constantly high on the policy agenda of different countries since 1970s that shows its expected potential in the environmental policy development. Thus, the second main reason to choose taxes and GPP for our analysis is to investigate the pros and cons of a traditional and a relatively innovative policy instrument exploring their possible complementarity or/and substitutability. We now present these two policies in detail.

- **Environmental tax** is defined by the European Commission as “*a tax whose tax base is a physical unit (or a proxy of a physical unit) of something that has a proven, specific negative impact on the environment*”. It is a mandatory instrument that pushes producers directly to eliminate negative environmental effects of production.
- **Green Public Procurement (GPP)** is defined by the European Commission as “*a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured*”. It is a voluntary instrument that pulls producers towards greening of the production process indirectly through market demand.

How significant are these policies? Environmental taxation has been widely represented all over the world accounting for 2.4% of the EU-28's GDP varying from 0.77% in Liechtenstein to 4.14% in Denmark (Eurostat, 2013). The data on the MENA countries is scarce but OECD reports that green taxes accounts for 3%, 2% and 1.3% of GDP in Israel, Morocco, and Tunisia respectively (OECD, 2016). Since public purchasing accounts for 14% of GDP within the European Union (European Commission, 2016) and around 18% within the MENA region (OECD, 2013), GPP has a significant potential to influence markets and industries. Thus, in 2009-2010 as much as 38% of the total public procurement value in the European Union was environmentally friendly (Renda et al., 2012). By reading these figures we may feel a sense of comfort because the tools are potentially powerful. But challenges are big. Even limiting the attention to the MENA region gives us an idea. The costs of environmental degradation for this region range from 2-3 % of GDP in Tunisia, Jordan, and Syria, to 5-7 % of GDP in Egypt and Iran (Croitoru & Sarraf, 2010).

Although the literature has extensively studied the effects of tax policies, there are less than a handful of studies on GPP. It is certainly fair to say that current GPP policies are carried out in the dark. The sidereal emptiness in the literature about GPP calls for a thorough investigation that we attempt to provide in our study and that we report in this brief. Moreover, two other aspects characterise our approach. First, a theoretical policy analysis is particularly interesting when it compares alternative policies. This is why we focus on two policies belonging to two different categories. We find that these two policies differ substantially in the economic consequences of environmental degradation reduction. Their political viability is therefore very different. Moreover, that allows to consider them as complements rather than substitutes. Second, we think that a policy study cannot ignore the context. Most studies on environmental policy ignore completely the fact that any policy implementation in current times will take place in the context of globalisation. This is why we explore the consequences of trade integration on the effectiveness of the two policies we consider. We find that in the absence of international coordination, trade integration has a strong impact on the effectiveness of these policies.

Overall, this policy brief sheds some light on the pros and cons of the implementation of environmental taxation and GPP in general and, particularly, in the EU-MENA partnership.

3. Approaches and Results

Our research compares the impact of environmental taxation and GPP on the “green intensity” of the economies and how they evolve with trade liberalisation in the general equilibrium setting. Our approach implies that both instruments target the same type of environmental degradation aiming to conduct a comparative analysis. We build a model that most closely represents the current normative framework allowing to investi-

gate the greening of the economy. Particularly, we focus on the aggregate environmental degradation caused by the production process and on the purchasing power weakening caused by the corresponding regulation. The model uses two sources of heterogeneity - across firms in regard to their productivity and environmental degradation intensity, and across countries in regard to the type and stringency of environmental policy. We investigate producers' immediate reactions to the regulation ignoring possible impact of public policy on the technological progress, induced changes in long-term consumer behaviour, or any other long-term decisions. The government is assumed to be the only environmentally aware agent able to distinguish between a green and a non-green production technology (consumers are assumed to be unable to make such distinction). We also do not allow the collected environmental tax payments influence the principal indicators of our research that are the environmental degradation level and the purchasing power in order to focus on the pure effect of the both policy instruments.

The research is carried out in two stages. First, we address the effects of green policy under autarky exploring its economic and environmental impact. Second, we construct an open economy setting in order to investigate economic and environmental outcomes of trade integration across countries conditionally on their green policy design.

GPP and environmental tax compared. Our research emphasises a higher relative efficiency of GPP in comparison with taxation in a closed economy. The simulations show that one unit of purchasing power loss with GPP corresponds to, on average, a 6.7 times more significant environmental degradation decrease in comparison with taxation. Meanwhile, in terms of absolute impact, taxation is more powerful than GPP because it results in a 1.8 times stronger decline in environmental degradation, though it brings about a 10.7 times stronger purchasing power reduction. This result discloses an important trade-off between the political viability and the absolute effectiveness of alternative environmental policies. We argued above about the importance of comparing alternative policies in theoretical studies. This is an example. Without a comparison the trade-off result would not become known.

Environmental policy in trade integration. The main research findings are related to the result that not only the type but also the stringency of environmental policy matters for environmental and economic effects across trading countries.

Our results can be grouped in three main propositions:

Proposition 1. Trade and environment complementarity. When environmental policies are identical both in their type and stringency, trade integration leaves the environmental degradation level unchanged but incurs an increase in purchasing power across trading countries. Thus, trade policy is complementary to environmental policy where the latter leads to a "win-win" situation for all the countries.

Proposition 2. Pollution haven effect. In accordance with the existing literature, we show that the country who opts for more severe environmental taxation wins from trade integration with the country who introduces GPP or lower taxation. This is a "pollution haven effect" by which trade integration makes polluting industries move from countries with more severe to countries with less severe environmental regulation, while not necessarily leading to the reduction of global environmental degradation.

Proposition 3. The paradox of virtue. If all countries opt for the GPP policy, the more environmentally virtuous country whose government spends more on green goods faces purchasing power decline while the less environmentally virtuous country whose government is less generous in environmental spendings gains. Meanwhile, the global environmental degradation is declining.

4. Conclusions

The theoretical part of our research contributes to the existing studies in several dimensions highlighting new pros and cons about the implementation and the harmonisation of regulatory instruments in autarky and upon opening to trade. To the best of our knowledge, this is the first attempt to address the issue of GPP in comparison with environmental taxation in the general equilibrium framework with several types of heterogeneity. The results on the environmental taxation are in line with the existing literature while the results on GPP challenge the current perceived skepticism showing its relative efficiency in comparison with taxation.

Despite the fact that this research provides a comparative analysis of two policy instruments in question, we are not considering them as substitutes. Taking into account their strengths and weaknesses, they can rather act as complements compensating each other's disadvantages. Moreover, it is necessary to mention that the implementation of taxes and GPP requires a preliminary investigation of the particular socio-economic situation that could drastically influence the policy efficiency. Thus, the severeness of taxation and/or the benevolence of GPP should be, at least, co-ordinated with the economic and social capacity of the country, the degree of information dissemination in the society, and its level of eco-awareness.

Our research discloses the possible outcomes of green policy (un)harmonisation allowing to provide corresponding recommendations for the policy makers. In the next section of the brief, we apply our findings to the EU-MENA environmental partnership.

5. Implications and Recommendations

Our research discloses three sound results that can inform the current policy approach in the EU-MENA environmental collaboration.

GPP advantages and disadvantages. First of all, we support the wide implementation of GPP as an efficient approach to environmental policy design in any country of the EU and MENA regions regardless of the level of their development and/or eco-concerns. Despite being a voluntary tool, it can motivate firms to opt for green technologies even when the only incentive is originated from the government. The effect can be amplified by taking into account the consumers eco-biased demand that, in its turn, can be boosted by the corresponding public policy. At the same time, GPP is not risk-free: the absence of public monitoring can diminish the positive effect of the policy approach allowing firms to greenwash, or cheat on the environmental quality of their products. Accordingly, a corresponding monitoring policy is required.

Policy harmonisation. A second set of results can be used to support the environmental policy harmonisation across trading countries. This strategy can be seen as a first-best or a "win-win" option that allows the actors to coordinate their environmental efforts without implicating any disproportional burden to any of them. Meanwhile, this approach requires the countries to be on relatively the same level of economic and institutional capacity to introduce symmetric policy instruments.

Coordinated GPP as a form of cross-country environmental support. A third set of results is related to the environmental support across countries when one can be a donor, and another one - a recipient. Our findings leave the room to imbalances in policy approaches: a country that has higher financial and institutional capacity to develop GPP can increase its green public spending allowing a country that has lower financial and institutional capacity to develop GPP to benefit from the green demand of the partner country. Donors are in the position to set the standards and quality control that allows to diminish or even avoid greenwashing and, at the same time, propagate the corresponding ecological standards to the recipient. This approach can be

considered for the collaboration of EU and MENA countries in order to strengthen the environmental policies in the latter and establish a first step towards the harmonisation of green policy approaches.

The coordination of environmental policies is of particular importance for the MENA countries in view of meeting the Sustainable Development Goals (the UN, 2015), as well as for two following reasons. First, a relatively low share of intra-regional trade with the EU - 5.9% in exports and 5.1% in imports (European Commission, 2018) - is expected to increase due to the current policy agenda of the Euro-Mediterranean trade partnership. Thus, further trade liberalisation will increase the opportunities for cross-region cooperation and an environmental policies harmonisation could be key to avoid the above mentioned "pollution haven effect". Second, the decline in economic growth in the MENA region from 5.0 % in 2016 to 1.8 % in 2017 (World Bank, 2018) that could potentially be partially restored with the contribution of a deeper trade integration. At the same time the environmental degradation increase that might correspond to economic growth can be mitigated by the environmental policies coordination.

** The main source of this policy brief is a joint research project of the authors based on the chapter of the doctoral thesis of Vera Danilina.*

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- to improve the understanding of priority stakes in the economic and social spheres, and their repercussions on Mediterranean partners in the framework of implementation of EU Association Agreements and Action Plans,*
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