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A CONCEPTUAL FRAMEWORK FOR THE IDENTIFICATION AND GOVERNANCE OF EUROPEAN PUBLIC GOODS

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The challenging current policy environment has raised the question of which policy decisions should be taken at national level and which at European Union level. As a general rule, the EU should be responsible only for the provision of European public goods (EPGs), while countries are better placed to provide national public goods. However, in practice, the situation is rarely that simple. We offer a framework for identification of EPGs with three main insights.

First, a decision to provide a public good at national level, EU level or a combination of both depends on the degree of heterogeneity of preferences across countries and the efficiency case for EU-level provision. When preferences vary and the efficiency case is weak, goods should be provided at national level. When preferences are similar and the efficiency case is strong, goods should be provided at the EU level. When preferences differ but there is a strong efficiency case, a trade-off arises.

Second, institutional and legal instruments exist already to manage this trade-off. These include: competence transfers, decision-making modalities, variable participation of countries, centralisation of delivery and funding, and compensating negatively affected countries to achieve greater alignment of preferences.

Third, both the efficiency case for EPGs and the distribution of preferences over their provision may change over time. This could be because the world around the EU changes (for example, giving greater weight to an efficiency case, eg in areas related to defence) or because preferences change, for example, as result of a pandemic, or because a particular institutional or compensation practice convinces dissenters that they can be better off inside than outside a multi-country arrangement governing the provision of a public good.

An implication is that the question 'should public goods be provided at the national or European level?' may be the wrong question to ask. The right question is how to find institutional arrangements for public-good provision, to maximise the benefits of public goods for EU members.

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1 Introduction

From the COVID-19 pandemic and multi-decade-high inflation to climate change and wars at its doors in Ukraine and in the Middle East, European Union policymakers have faced a host of geopolitical and economic challenges and are working to formulate appropriate responses. The debate on how to tackle these challenges has subsumed many of the EU's old and new tasks under the umbrella of European public goods, defined very broadly as projects that should be provided at the central level (Breton, 2024; Draghi, 2023).

However, there is a lack of operational benchmarks to determine which, how and to what extent public goods should be provided at EU rather than national level. How should the EU decide when the benefits of EU-level provision of public goods justify the potential costs in terms of reduced national sovereignty, differences in preferences regarding the nature and level of public goods, and the greater detachment of Brussels-based institutions from national and local concerns? To what extent could these costs be reduced through suitable institutional arrangements that would better govern EU-level provision of public goods?

The purpose of this paper is to provide answers to these questions, based on a new definition and identification framework for European public goods. We apply this framework to the universe of legal and institutional options for the supranational provision of public goods in the EU, offered both by the EU treaty and by legal and institutional arrangements that are consistent with it.

Our analysis connects to three strands of literature. It builds on the fiscal-federalism literature, which explores who should be responsible for providing public goods in federal and sub-federal structures (Tiebout, 1956; Oates, 1972; Alesina *et al*, 2005). It also extends the policy literature that applies fiscal federalism to the European context and seeks to identify the scope of European public goods and the means by which they can be delivered (Fuest and Pisani-Ferry, 2020; Buti, 2023; Thöne and Kreuter, 2020; Wyplosz, 2024). We add to this policy literature with a perspective that integrates identification and governance aspects of public goods, balancing the institutional governance of providing public goods with the individual efficiency case for each public good. Finally, we take into account the contributions that examined the legal limitations to the provision of European public goods (Calliess, 2021; Naess-Schmidt, 2018).

Section 2 presents our basic framework, leading to a classification of goods based on the efficiency case for EU-level provision and the extent to which preferences for these goods are similar across the EU. Section 3 explains the governance design options that are available to provide public goods efficiently inside the EU, while taking into account varying preferences in different countries, and applies these design options to the classes of goods identified in section 2. Section 4 concludes.

2 What are European public goods?

2.1 Definition

What is a public good?

When should a particular good be supplied by the public rather than the private sector[1]? The traditional definition of a public good (Samuelson, 1954) considers essential features to be non-rivalry (ie someone's consumption of the good does not reduce the supply available to others), and non-excludability (ie the good can be consumed by anyone). These features lead to free-riding and under-provision of the good, justifying public intervention.

However, for our purposes, we consider this traditional definition of public goods to be too restrictive. Other coordination failures can also lead to the under-provision of a good compared to its optimal level, and that might also require public intervention[2]. So, we define a public good as a good that is not supplied at an adequate level without public intervention (which could take various forms including direct provision/government expenditure or regulation). This lack of supply could arise because of any coordination problem, not only non-exclusion/non-rivalry but also, for example, network effects.

An example of this is green transportation and in particular the transition to electric vehicles (EVs). Consumers hesitate to purchase EVs because of fears about the insufficient charging infrastructure; this restricts demand. Meanwhile, companies might be reluctant to develop charging networks without a sufficient number of EVs to justify their investment, thus leading to not enough supply. Establishing a dense network of EV charging points thus contributes to a public good, which is not related to the usual non-exclusion/non-rivalry market failure.

At what level of government should a public good be provided in Europe?

Should a public good be provided at local, national, European or global level? Determining the appropriate governmental level for the organisation and funding of public goods typically involves a trade-off (Alesina *et al*, 2005). Preferences differ across geographical and political entities, which tends to favour the provision of goods at local level. However, there is the potential for improved efficiency through internalising externalities and capitalising on economies of scale, which pushes in the other direction. Decentralisation is thus optimal when the costs of providing public goods at a lower level of governance are less than at a higher level of governance, either because there is no gain related to inter-jurisdictional spillovers or economies of scale, or because these gains are lower than the costs associated with supplying uniform public goods, as opposed to tailor-made public goods to take into account varying preferences. Decentralised provision can also beneficial because of better knowledge of preferences at local level or greater democratic accountability. The optimal level of provision of a public good is thus the one that reaps efficiency gains, while taking local preferences into account.

An encompassing definition of European public goods

Combining these two definitions, a European public good (EPG) can therefore be defined as a good not supplied at an adequate level without public intervention, and which should be provided, at least

[1] Obviously, providing public goods can involve contributions from private goods. For instance, security is offered by the state as a public good, but is delivered through the production of private goods (eg defence equipment).

[2] This broader definition of public goods is in line with the more recent academic contributions on the allocation of public goods across level of governments (Oates, 1995), and with the policy literature {Fuest and Pisani-Ferry, 2019).

partially, at EU level[3] to internalise externalities and reap benefits of scale, notwithstanding potential differences in national or local preferences.

Specific reasons to centralise (or at least coordinate) the delivery of public goods at EU level that have been previously discussed can be interpreted in that framework. One often-mentioned argument for the centralisation of policies is consistency with the single market. If state aid is deemed desirable and suitable to pursue a particular policy objective (eg for agriculture or for clean tech), it could be provided at EU level to ensure a level-playing field across all member states. This fits our definition because national state aid could be considered as a negative externality on other member states, which would be internalised through centralised state aid.

2.2 How can EPGs be identified in practice?

Given this definition of EPGs, identifying them from an economic perspective should be a four-step process:

1. Assess externalities/spillovers between national jurisdictions and see if/how these externalities can be internalised, should the public good be provided at EU level[4].

2. Assess economies of scale and savings that could be achieved by providing the good at the EU level; in particular measure if fixed costs are too large for a given member state and check if the costs can be supported at EU level[5].

3. Assess the differences in preferences of EU countries. Two different forms of preference heterogeneity should be assessed:
   - Preferences on the *level of provision* of a specific public good (eg defence spending might be more important for Poland than for Ireland). Various instruments could be used to measure this: surveys or current expenditure levels (assuming that the national governance process that has led to these expenditures represent well the preferences of citizens).
   - Preferences on the *level of government* at which the good should be provided (eg two countries might have same defence spending, but might prefer that defence is provided only at the national level, because they consider it to be part of national sovereignty). Surveys should be the main tool to measure this.

[3] Some public goods should even be provided at a higher, ie global, level, but given the difficulty of global cooperation, the second best is to start with the EU level so that it can then apply its weight in global negotiations.

[4] There are various methods to do this. For instance, looking at a short list of potential public goods, Weiss *et al* (2017) quantified the expected contributions and payoffs for each EU country in two scenarios (the *status quo* and a hypothetical provision at EU level, or vice versa). They argued that the level of provision (ie European or national) that leads to a higher correlation between countries' shares in the benefits and costs of the policy is the level that best internalises spillovers.

[5] Again, there exist various methods to do this: Weiss *et al* (2017), for instance, estimated where possible the slopes of cost or production functions of selected public goods to determine whether economies of scale exist.

Table 1: What constitutes a European public good?

	Internalise externalities if provided at EU level	Economies of scale if provided at EU level	Similar preferences across EU	European public good	Examples	Group	Currently provided at EU level
Good A	Yes	Yes	Yes	Clear yes	Cross-border infrastructure; external border protection; pandemic prevention and health crisis-management; knowledge through research	1	Yes (eg COVID-19 vaccine procurement: Schengen; Horizon Europe)
Good B	No	No	No	Clear no	Primary and secondary education; local cultural offers; local infrastructure	3	Primarily nationally but also at EU level in some cases (eg local infrastructure through EU funds)
Good C	Yes	No	Yes	yes	Competitive markets; conservation of marine resources	1	Yes (eg competition policy)
Good D	No	Yes	Yes	yes	Administrative efficiency	1	Yes (eg customs)
Good E	No	Yes	No	Trade-off	Defence: procurement of military equipment	2	Primarily nationally, for defence EU coordination and very limited EU budget support
Good F	Yes	No	No	Trade-off	Food security	2	Yes (elements of the CAP*)
Good G	Yes	Yes	No	Trade-off	Climate protection; macroeconomic stability; economic resilience; defence: joint forces; external border protection, energy security; foreign security; economic security	2	Yes (eg European Green Deal; European Stability Mechanism or banking supervision; investment screening)
Good H	No	No	Yes	Not needed	Local security (police, fire); local water supply	3	Primarily by EU countries, but also at EU level (eg elements of the CAP: preservation of rural landscape)

Source: Bruegel. Note: * CAP = Common Agricultural Policy.

4. Finally, a difficult task is to weigh these three elements (spillovers, economies of scale and preferences) to decide whether a public good should be provided at EU level. There are a few cases that are relatively clear: Group 1 (goods A, C and D in Table 1), for which there are similar preferences and clear efficiency gains and Group 2 (goods B and H in Table 1) which does not meet these conditions). However, in most cases, trade-offs arise (Group 3 in Table 1). This is the case when efficiency gains could be achieved by providing a good at EU level, but the preferences of countries clearly differ (goods E, F and G in Table 1). In our view, this doesn't mean that these goods should be entirely excluded from the category of European public goods. Rather, it underscores the need for mechanisms to factor in varying preferences and address them. Dealing with these trade-offs should be done through the European governance process. This is what we discuss in section 3.

2.3 The evolution of trade-offs over time

Before addressing the question of how the governance framework should be designed to take into account the specificities of a public good, it is crucial to also acknowledge that the trade-off determining whether a public good is national or European may change over time, because the elements of the trade-off may vary depending on the strength of the efficiency case (externalities, scale economies), the occurrence of external factors, the evolution of preferences in society and the institutional framework itself. Consider the following examples with an evolving trade-off.

Brexit could be interpreted as a case in which the balance between efficiency and different preferences has evolved over time. While positive externalities and economies of scale were a leading motivation for the United Kingdom to be part of the EU for a long time, the global reduction in trade barriers made the efficiency case for EU membership less visible for the UK. On the other side, preference heterogeneity and dissatisfaction with the uniformity of EU rules finally outweighed the case for the UK to be part of the EU – at least for the citizens who voted 'leave' in the referendum. This is in line with the literature emphasising that economic benefits from a larger domestic size shrink when barriers to international trade are lower (Alesina *et al*, 2000, 2005; Spolaore and Wacziarg, 2005).

The reverse may be true for EU border protection. Even though there are clear economies of scale, border security has long been viewed as sensitive to national sovereignty concerns and has thus remained strongly under member states' control. However, new threats to security have strengthened the externality argument for EU-level provision. Border security is a 'weakest-link' public good: sufficient provision is only ensured if all states provide sufficiently high protection of external borders; one country not contributing can threaten the value of the public good for all other countries. Increasing external threats (eg military or geopolitical), or less-credible NATO protection, may also change preferences towards joining forces in security and defence affairs. For both reasons, the balance in the trade-off between efficiency and heterogeneity of preferences may shift toward central or coordinated provision (Riker, 1964; Spolarore, 2012).

To make the matter worse, in some cases, the decision on whether to centralise or decentralise may not even always be obvious *ex ante*, which may lead to a sub-optimal allocation of responsibilities. This may be the case when complementarities occur. Take financial regulation as an example. In some cases, centralised supervision and cross-border integration are complements: centralised supervision helps banks attract foreign funding, while conversely more reliance on foreign funding increases cross-border externalities and hence the need for centralised supervision (Colliard, 2020). The conditions that make centralisation beneficial may not be satisfied *ex ante* but only *ex post*.

The adequacy of EU-level governance could also lead to changes in preferences over time. Having institutions in place that account for minority positions (eg at the EU level through unanimity in the Council, or through a greater role assigned to the European Committee of the Regions) may serve to overcome scepticism and resistance in some countries about centralising EU activity. Minorities that are initially relatively distant from European median preferences may alter their preferences, whether this is institutionalised through specific rights (eg stronger regional involvement in the subsidiarity test applied to EU lawmaking) or through financial compensation (eg through regional and cohesion funds or individualised EU support schemes), to take into account that some countries or regions might be affected negatively by the centralisation of some policies, even if it is overall beneficial.

In sum, assessment of the trade-off should take account of the dynamic effects of external factors and of the internal institutional governance framework.

3 How to deliver public goods in the EU: building the right institutional framework for each good through a menu of design options

The previous section highlighted that public goods can vary significantly in the degree to which they can be characterised as European or national. As a consequence, there should not be a 'one size fits all' governance approach for all public goods. Put differently, the governance of each public good should depend on its idiosyncrasies in terms of externalities, economies of scale and preference heterogeneity – also taking into account the fact that, as discussed, the problem of preference heterogeneity can be influenced and reduced with the right governance structure.

However, the EU's current institutional and legal framework already offers a comprehensive range of tools to bring the governance design of public goods into line with the economic rationale for public good provision at EU level. Specifically, there are five main governance parameters that can be used to address trade-offs related to the provision of public goods in Europe: competence transfer, decision-making modalities, variable participation of countries, centralisation of delivery and funding, and compensation of negatively affected countries. The most crucial question might thus be about whether currently available options are used correctly to provide public goods through the right institutional arrangements. As we outline the various parameters that can be used in the governance framework, we will provide examples of public goods to see if this is the case, and if not, how governance could be improved.

3.1 Who has rule-setting power? Adjusting the scope of competence transfer from member states to the EU

The most fundamental tool is to allocate the scope of competence between member states and the EU. There is a whole spectrum in allocating the provision of a public good through the order of competence in the Treaties. At one end of the spectrum, public-good provision can be at country level without any involvement of the EU, with no institutional or formalised coordination of member-state policies. At the other end of the spectrum, the EU can have exclusive responsibility, legislating and acting through EU institutions.

There are many intermediate options. Legislation and enforcement can be centralised, with some provision by member-state authorities if this does not put the supply of an EPG at risk (eg competition policy to deliver the public good of competitive/undistorted markets). Alternatively, policy responsibility may remain with member states, but the EU could help coordinate domestic policies (eg the European Semester to deliver the public good of macroeconomic stability).

The power to legislate is the first level of competence allocation (before implementation or financing). The degree of competence transfer should be adapted to the strength of the economic case for EU-level provision of public goods. Without Treaty change, the allocation of competences can be shifted only for so-called 'shared competence'. In this area, if the policy actions pass the 'subsidiarity test'[6] – meaning that the policy objective is not sufficiently achievable at member-state level but is achievable at EU level – centralised action is possible. This legal test should be done when spillovers and scale economies suggest action at EU level (Calliess 2021; Fuest and Pisani-Ferry, 2019; Naess-Schmidt and Jensen, 2018). For further competence transfers (eg from shared to exclusive EU competence), Treaty changes are necessary.

But in many cases, there is no need to change the current rule-setting power by shifting competence, as Group 1 public goods (ie goods which clearly have the characteristics of EPGs, Table 1) are often already governed by 'shared competence', where the subsidiarity principle does not create hurdles to Europeanisation because there is a strong efficiency case for these public goods. In the cases in which a trade-off arises (Group 2), but for which there is a a strong efficiency case at the central level (eg joint procurement and interoperability in defence, good G in Table 1), legislative power should also be exercised at the EU level.

A shift to EU exclusive competence is desirable when externalities are significant, as in some Good A cases, such as pandemic prevention and crisis management (Table 1). Indeed, there could be major spillovers because of the risk of contagion between countries if there is insufficient prevention and/or insufficient crisis action in one country against a pandemic. Health thus becomes a 'weakest-link' public good during pandemics. This contrast with other elements of health policy, which is typically characterised by national idiosyncrasies and path-dependence (ie heterogenous preferences), and which should therefore remain in national hands. Accordingly, EU centralised power must be limited to preventing negative cross-border spillovers and to the tapping of economies of scales. *Ex-ante* EU legislative power could oblige EU countries to acquire necessary stocks of medicine and vaccines, or harmonise vaccine requirements between countries, to ensure that there is no coordination failure or free-riding behaviour from a country. And during health crises, the EU could also have a more important role to play to coordinate the response and act swiftly (eg empowering the Commission to declare a state of emergency, rather than leaving this decision to the Council).

[6] Article 5 paragraph 3 of the Treaty on European Union (TEU).

On the contrary, in other cases, such as with Goods B and H (Group 2) in Table 1, member states' competences should be maintained (eg in cultural matters or primary education), or even re-established. For instance, one of the objectives of the Common Agricultural Policy (CAP) is to contribute to the *"preservation of rural areas"*[7]. However, there are no spillovers or economies of scale associated with a country having a vibrant rural life. The same is true for local infrastructures, which are local public goods that are sometimes provided through the European Regional Development Fund, even in wealthy EU regions[8]. For these goods, there is no real need for centralisation of provision. If at all, the EU could primarily function as a platform for sharing information, identifying best practices and setting benchmarks.

3.2 How is the decision taken? Calibrating decision-making majority in the Council

One instrument determining the weight given to member states' preferences in EU-level decision-making is the voting procedure used in the Council of the EU and the European Council, and particularly the choice between unanimity and qualified-majority voting (QMV). While QMV is the most widely used voting method in the Council today, with 80 percent of legislation adopted through this method, unanimity continues to be required in certain policy areas.

The voting method should reflect the extent to which diverging preferences are allowed to block central actions that might be profitable for efficiency reasons. The greater the significance of efficiency considerations – ie the stronger spillovers and scale economies are – the more heterogeneity of preferences should be overruled (and vice-versa).

To do that, decision-making requirements can be adjusted without Treaty change using the 'passerelle clause', which gives some scope to move from unanimity to QMV[9]. Within the existing Treaty framework, QMV could, among other things, be extended to taxation policy, environmental and energy policy, social policy, and foreign and security policy (but not military and defence[10]). While this would reduce alignment with national preferences (perfectly obtained through unanimity), the use of passerelle clauses could help maintain legitimacy and preference orientation at a high level because national parliaments can overrule the move to QMV if necessary[11]. Activating passerelle clauses should thus be the default option when efficiency considerations commend it.

Preference heterogeneity is also taken into account through institutional safeguards to protect minority and regional rights. This could be done by strengthening national parliaments in the subsidiarity control mechanism, which gives national parliaments the right to object to EU action when

[7] See https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/cap-glance_en.
[8] See the example of Hamburg port; European Commission, EU regional and urban development projects database, 'Port of Hamburg uses green 'smart batteries' to support the German energy transition', 16 October 2019, https://ec.europa.eu/regional_policy/projects/projects-database/port-of-hamburg-uses-green-smart-batteries-to-support-the-german-energy-transition_en.
[9] Article 48(7) TEU and special passerelle clauses.
[10] Article 31(4) TEU
[11] Article 48(7) subpara. 3 TEU.

they consider subsidiarity to have been violated[12], or by strengthening the Committee of the Regions in EU lawmaking.

Given that Group 1 public goods are characterised by relatively homogenous preferences, QMV should be the rule to avoid strategic voting and inefficient bargaining between countries. With respect to the governance of Group 2 public goods, a unanimity requirement in the Council should be maintained if the heterogeneity of preferences weighs more than the size of spillovers or scale economies. Conversely, if spillovers are considered more important than heterogenous preferences, QMV should be chosen in order for efficiency cases not to be outweighed by heterogenous preferences. Defence is a good example in which there would be efficiency gains if it was centralised because of externalities and scale economies. It is also an example of a public good for which there are reasons to vary voting requirements within the same public good. Common procurement of military equipment (with significant scale economies and limited preference heterogeneity) should be governed by QMV, while decisions on a joint army should respect unanimity (because of strong preference heterogeneity on core sovereignty issues), at least if it involves the whole EU. Another approach to this issue could be only for countries with similar preferences to pursue it, in which case QMV could be used within this restricted group (as discussed in the next section).

3.3 Who participates? Variable participation in integration: 'club provision' of public goods

While modifications to the decision-making process in the Council are symmetrical in the sense that all member states continue to participate in the process, instances may arise in which efficiency and heterogeneity of preferences require an asymmetrical process. This could occur when the efficiency argument doesn't apply equally to all member states, or when certain countries have notably distinct preferences. This may lead to moving from 'full participation' of all EU members to 'club cooperation'.

For some goods, club cooperation increases efficiency and reduces the under-provision of public goods. This would the case, for instance, if several EU countries with similar preferences decided to pool resources to coordinate their defence policies (as discussed above; see also Fuest and Pisani-Ferry, 2019).

From an institutional perspective, 'club cooperation' can take several forms, some of which are within the EU institutional and legal framework while others are outside of this framework. The choice between these options should depend on the economic case:

- The least intrusive option, which is possible in the area of Common Foreign and Security Policy, is through 'constructive abstention'[13], which does not oblige a member state to implement a decision, but to accept that the decision commits the Union.
- Second, 'enhanced cooperation' can be established among a minimum of nine countries to pursue action within a non-exclusive competence of the EU[14]. While fragmented, enhanced cooperation leaves the institutions of the EU intact, letting non-participating members easily

[12] Protocol (No 2) to the TEU on the application of the principles of subsidiarity and proportionality.
[13] Article 31(1)(2) TEU.
[14] Article 20 TEU.

join the club at a later stage. Respect for preference heterogeneity may be a choice for good G in Table 1 (eg for external border protection, or to build an EU fiscal capacity to deliver macroeconomic stability).

- Third, in cases where 'club integration' is not politically feasible within the Treaty framework, willing states may pursue public-good provision outside of the Treaty – like the Schengen agreement, which was pioneered by a few countries, but later adopted by many and integrated as enhanced cooperation into the EU Treaty. Deeper integration in defence (eg to build joint forces) may be implemented through intergovernmental cooperation.

Club provision may itself lead to an evolution in the trade-off between efficiency and preference heterogeneity, as preferences may converge gradually (as discussed in section 2.2). While Schengen was initially inconceivable with the EU institutional and legal framework because of significant differences in preferences, the efficiency case for removing internal border controls (and the absence of significant negative experiences) changed preferences in such a way that Schengen was ultimately integrated into the EU legal framework. Similarly, some countries decided in 2012 to create the European Stability Mechanism (ESM) to resolve the sovereign debt crisis, because the Treaty initially did not provide a legal basis for an institutionalised scheme for solvency-securing financial support. The ESM is not integrated into the EU institutional framework and is governed by its own international agreement, but it was made possible by an amendment to an article (136) in the TFEU. This type of 'club integration' outside of the main EU Treaties can also be useful when the club has fewer than nine members, contrarily to enhanced cooperation which requires a minimum of nine participants.

However, club integration is not suited to the provision of all public goods. This is the case when non-participating countries could free ride on the efforts of club members. For instance, to achieve climate protection (an example of good G), the commitment to lower emissions by a club would be undermined if non-participating countries free ride because they have no incentive to join the club. Similarly, to achieve economic security (another example of good G), all countries should participate to a minimal level of screening of foreign direct investment to prevent some countries representing a weakest link and undercutting overall security standards in the EU. In such cases, club goods might not be feasible and other instruments – eg compensation of potential losers from centralisation, discussed in section 3.5 – would be necessary to incentivise the participation of all countries and avoid free-riding behaviours.

3.4 How deeply is the EU level involved? Centralisation of funding decisions and centralisation of delivery

Besides the transfer of competence that shifts legislative power from member states to the EU, there are two more levers through which governance can be tailored to a specific EPG: its funding and its delivery. The extent to which all levers of governance should be centralised (legislation, funding, delivery), or whether elements of decentralisation should be maintained, depends on the specifics of each public good.

Combinations of legislation (section 3.1), funding and delivery of public goods can be achieved in several ways. In some cases, it may be enough to play by a uniform rulebook (eg to respect the single market) but to leave funding and spending decisions at national level to cater for national preferences (eg subsidies for cultural goods or industrial policy). A uniform rulebook may in some case be sufficient to minimise potential externalities, while respecting diverse preferences.

However, in other cases, the provision of an EPG may require both centralised regulation and centralised funding decisions and/or centralised delivery, as public funding and delivery at the national level may fail to account for the potential efficiency gains related to cross-border externalities or scale economies. The NextGenerationEU (NGEU) recovery instrument is an example a centralised funding tool (through the issuance of debt) and a uniform rulebook determining the spending priorities across the EU to deliver several EPGs (climate protection, macroeconomic stability, etc). At the same time, in that particular setup, delivery remained decentralised, leaving precise project selection to member states.

When decentralised funding is inefficient, efficiency may not necessarily require full funding at EU level. Coordination of spending between countries or top-up funding from the EU may often be sufficient to achieve the right level of provision of the good. This type of top-up funding would, for instance, be adequate to deliver the necessary green investments to achieve climate protection (good G) in the future. As discussed, this is what has been done, at least partly, with NGEU, but the programme will end in 2026, while most of the effort will have to continue until 2050. Another example of a public good that should be achieved at EU level is economic resilience in response to the increase in the vulnerability of European countries to geopolitical shocks, which has become apparent in recent years. A purely national 'de-risking' strategy would be inefficient as it would not internalise the spillovers from the dependence on specific countries and would also forego scale economies. An answer to this is to centralise instruments to conclude EU trade agreements and to unionise inbound/outbound investment control and promotion of foreign trade and investment, with the clear objective of increasing the economic resilience of the EU as a whole. This should be complemented with top-up EU investments to reduce vulnerabilities related to the dependence on specific countries by investing in relevant sectors, such as innovative technologies (Tagliapietra *et al*, 2023).

In some cases full budget centralisation or centralised delivery might be necessary, in addition to a uniform legal rulebook. Centralisation of funding is already the norm for subsidies provided to farmers to achieve food security (good F). These subsidies are provided centrally through the CAP to avoid the negative externalities that this could represent for other EU countries if subsidies were delivered at the country level. Similarly, external border protection is an example of a 'weakest-link' public good creating externalities because an insufficient border protection of only one EU member can reduce the security for all members. Impediments to effective border protection may be caused by financial unwillingness or political inability. Where border protection is not sufficient, the EU can exercise its existing legislative competence to participate in border protection management (section 3.1) and deliver it through Frontex (the EU agency that coordinates border management) in centralised fashion. Centralisation could be extended to other areas. Defence procurement (eg joint large-scale purchases of military equipment) or health procurement (eg preventing or combatting pandemics) should be delivered at EU level. Large-scale and risky R&D projects that would not be pursued at country level because they are too expensive should also be funded and delivered at EU level.

Finally, as discussed in section 3.1, there are also public goods that are currently financed and/or delivered at EU level that exhibit neither externalities nor economies of scale: local infrastructures with no cross-border spillovers or the preservation of rural areas. These should be financed and delivered at national or regional level.

3.5 How can different preferences be accommodated? Compensation to mitigate preference heterogeneity

When efficiency requires either full centralisation or at least broad participation in the provision of public goods, but some countries (or politically influential groups in the those countries) would be affected negatively, compensation schemes at the level of EU countries, regions, households or companies may be suitable tools to reap efficiency gains that would otherwise be blocked by the losing party, in particular in cases in which club good provision is not desirable (section 3.3). Moreover, as discussed previously, financial compensation may also reshape preferences and make them more homogenous. To that end, the proceeds resulting from efficiency gains might have to be used (at least at the beginning) for distributional purposes.

This may be implemented through different channels: by the EU allocating budgets to individuals or companies administered by countries or regions, in order to mitigate the impact of structural change on individuals (as it is already done through the European Globalisation Adjustment Fund[15] and the Social Climate Fund), or indirectly through compensation paid to EU countries (eg through the Just Transition Fund[16] or Structural and Cohesion Funds). These various funds and compensation schemes can be used to align local preferences with an efficiency-based need for centralisation. For example, energy security is a public good of EU relevance because national decisions on power plants and renewable energies can impact other countries. There is certainly an efficiency case to allocate renewable energy where it can be produced most cost-efficiently. Centralised regulatory authority should thus (at least partially) be allocated to the central level to tap efficiency gains that promote energy security (section 3.1). This could however lead to high distributional effects between countries (as some countries would not have any competitive advantage in solar or wind). To convince all EU countries to participate and to influence their preferences, compensation schemes could be used to compensate potential losers and mitigate the distributional effects associated with the overall efficiency gains from centralisation. Cohesion policies (eg through the Just Transition Fund) or policy-specific compensation programs (eg through the Social Climate Fund) are the appropriate instruments to smooth this kind of distributional effect.

[15] See eg Claeys and Sapir (2020) on how this fund can compensate potential losers from the EU's trade policies.
[16] See eg Cameron *et al* (2020) on the use of this fund to compensate potential losers from the EU's climate policies.

4 Conclusions

This paper has offered two main insights. First, the determination of whether to offer a public good at national or EU level, or a blend of both, hinges on the diversity of member-state preferences and the efficiency argument for EU-level provision. This efficiency rationale might stem from economies of scale or because national provision could generate cross-border externalities, both positive and negative. When preferences differ significantly and the efficiency argument is weak, goods should be furnished solely at national level; conversely, when preferences are uniform and the efficiency argument is robust, provision should be at EU level. However, when preferences are diverse yet the efficiency argument is compelling, a trade-off emerges.

Second, a plethora of institutional and legal tools exists, both within and outside the EU treaties, that can be employed to navigate this trade-off, aiming to maximise efficiency gains while accommodating preference heterogeneity or safeguarding minority interests. These tools include decision-making mechanisms in the Council, providing public goods at the level of groups of member states with similar preferences and employing strategies including enhanced cooperation and intergovernmental treaties. Additionally, strategies such as separating common decision-making from common financing, balancing common and national financing, and compensating countries or minorities to align preferences could be used.

Consequently, we suggest that framing the question as 'national vs European level provision?' may often be inappropriate. Instead, the focus should be on devising the right institutional arrangements for public-good provision that maximise the benefits for EU members, allowing for a spectrum of options, ranging from EU to national decision-making and financing. We offer a framework and examples to help policymakers identify optimal arrangements.

A first important caveat, however, is that the provision of public goods in such a way could lead to a multiplication of idiosyncratic governance arrangements (which would depend on the specific characteristics of each public good), which would spread responsibilities for different public goods between different levels of government. This could be difficult to read from a citizen's perspective and therefore make accountability more difficult. One can think about the simplicity and efficiency of the EU institutional framework as a 'meta' public good. On one side, the governance should correspond to the idiosyncrasies of each public good, but on the other side, having a uniform institutional framework offers economies of scale from an institutional efficiency perspective. The right institutional governance thus lies somewhere between a structure customised for each public good and one-size-fits-all governance. Overall, this is probably the price to pay for not being a federation and putting as much emphasis on subsidiarity as the EU does.

Another, somehow related, important caveat is that using an array of diverse arrangements to provide public goods at EU level, in order to take into consideration 'micro' economic gains and preferences, instead of using a real federal budget (like that in US, and not like the current EU budget, which is small and fairly inflexible), also comes at a macroeconomic cost. A common fiscal instrument would allow the macroeconomic fiscal stance to be managed at the EU level, depending on the economic situation, and would also allow quicker redeployment of tools and funds in case of changing challenges.

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