Politics at the Margin of Rule-Based Redistribution: Evidence from EU Cohesion Policy

Esteban Alemán-Correa*

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Abstract

How do politically motivated governments respond when institutional rules change where they retain discretion? I study this question in European Union Cohesion Policy, where Member States translate an indicative regional allocation into programmes and subsequently implement them, potentially under different governments. I compare the 2007–2013 and 2014–2020 programming periods, which differ in how discretion is distributed across these decisions.

Combining a reconstruction of the Berlin Method with regional election results for 20 Member States, I distinguish political support for governments responsible for programme design from that of governments managing implementation. In 2007–2013, a ten-percentage-point increase in support for the design-stage cabinet is associated with approximately 13 percent higher regional expenditure relative to the Berlin allocation, a relationship absent in 2014–2020. During implementation, current cabinet support is associated with approximately 5 percent higher subsequent expenditure in 2014–2020, but not in 2007–2013. Additional evidence points primarily to changes in the regional distribution of resources rather than faster expenditure.

These findings highlight how political incentives can remain relevant under rule-based redistribution, with their influence depending on the discretionary choices available throughout the policy process.

Keywords: Cohesion Policy, political incentives, delegation, policy implementation, regional redistribution.

JEL Codes: D72, D78, H77, R58.

*Southern Methodist University. E-mail: ealemancorrea@smu.edu.

1. Introduction

How do politically motivated governments respond when institutional rules change where they retain discretion? In multilevel governance, public policies require cooperation among authorities with different objectives, information, and political incentives. Common rules constrain choices but cannot fully determine implementation. Discretion allows governments to use local information and respond to changing circumstances, while leaving room for political priorities. Because rules need not constrain every decision equally, the political incentives reflected in policy outcomes may depend on which choices remain available to governments.

The distribution of decision-making authority shapes both political accountability and distributive incentives. Centralization can facilitate coordination across jurisdictions, while decentralization can strengthen governments' accountability to their local constituencies (Seabright, 1996). When the costs of public spending are shared, however, political representatives may favor their own constituencies, potentially distorting the allocation of resources (Besley and Coate, 2003). With sequential decisions, governments may inherit earlier choices while retaining discretion over subsequent ones.

European Union Cohesion Policy provides a setting in which national governments exercise discretion within a common regulatory framework. The European Commission establishes the rules and oversees a major investment policy intended to reduce regional disparities, while Member States design and implement programmes directing resources to regions. The Berlin Method provides an indicative regional distribution, but Member States retain choices over programme design, project selection, and adjustments, subject to EU oversight. Because programmes extend over several years, implementing governments may inherit their predecessors' commitments. I compare the 2007–2013 and 2014–2020 programming periods. In the later period, stronger requirements increased Commission involvement in programme design, while Member States continued to select projects and seek programme adjustments during implementation.

I find that the political support associated with expenditure differs across decisions and institutional settings. Support for the cabinet responsible for programme design predicts subsequent regional expenditure in 2007–2013, when Member States had greater design discretion, but not in 2014–2020. During implementation, support for successor cabinets is more strongly associated with expenditure in the later period. These patterns are consistent with institutional constraints shaping which government's political support is reflected in spending, without implying that political influence shifts mechanically from one stage to another.

Institutional restrictions can constrain politically motivated redistribution without necessarily eliminating

it. Formula-based transfers limit discretion over funding decisions, although political influence may persist through the parameters of a formula or the information used to apply it (Banful, 2011; Litschig, 2012). The assignment of authority also matters: in India, politically controlled transfers favored states important to the governing party, while an independent commission counteracted that pattern (Khemani, 2007). These findings show why allocation rules matter, but they need not determine how political incentives enter later decisions.

Political incentives can also shape expenditure after initial allocations. In the United States, districts represented by legislators aligned with the president receive more federal spending (Berry et al., 2010), while partisan federal procurement is concentrated in agencies more responsive to political appointees (Dahlström et al., 2021). Executive and administrative authority thus provide channels for political influence that a focus on initial allocations would miss.

This distinction matters for EU Cohesion Policy. Research links regional funding to electoral incentives and political institutions (Kemmerling and Bodenstein, 2006; Dellmuth and Stoffel, 2012; Dellmuth et al., 2017). Political alignment is also associated with funding and flexibility during implementation (Dotti, 2016), while national spending priorities exhibit continuity across periods (Hansum, 2025b). Together, these findings suggest that current political incentives and inherited choices can both matter, but leave open how the support of successive governments is reflected in expenditure when institutional constraints differ across connected decisions.

I distinguish the political support of the government responsible for programme design from that of successor governments exercising discretion during implementation. A simple two-stage delegation model clarifies why these relationships may differ. The Member State remains the Commission's agent, although the cabinet exercising discretion may change. At programme design, a government chooses an allocation based on local economic information and political incentives, subject to institutional constraints. During implementation, a potentially different government inherits that choice but may adjust it within the discretion that remains. Tighter design constraints weaken the relationship between design-stage support and final expenditure, while greater implementation flexibility strengthens the relationship with current support and more rigid implementation preserves earlier choices. Tighter design constraints can therefore increase the *relative* importance of current support even without increasing implementation flexibility; the model does not imply a mechanical shift in political influence from one stage to another.

I examine these predictions using regional expenditure from the European Regional Development Fund

(ERDF) and European Social Fund (ESF) in both periods. I reconstruct the indicative Berlin Method allocation as a common benchmark for observed expenditure. Combining these measures with national parliamentary election results for NUTS2 regions in 20 Member States, I measure political support as the combined regional vote share of parties in the national governing cabinet. I first relate support for the government responsible for programme design to subsequent expenditure relative to the Berlin allocation. I then follow expenditure over the remaining implementation window for successor governments and examine its relationship with current support, accounting for political conditions inherited from programme design and resources already spent.

Design-stage political support is positively associated with subsequent regional expenditure in 2007–2013, but not in 2014–2020. In the preferred specification, a ten-percentage-point increase in support for the cabinet responsible for programme design is associated with approximately 13 percent higher expenditure relative to the Berlin allocation in 2007–2013. The corresponding relationship in 2014–2020 is small and statistically indistinguishable from zero. I also find little evidence that cabinet support predicts the initial Berlin allocation after accounting for the formula's socioeconomic inputs.

During implementation, current political support is positively associated with subsequent expenditure in 2014–2020, while design-stage political conditions remain more important in 2007–2013. A ten-percentage-point increase in support for the current cabinet is associated with approximately 5 percent higher cumulative expenditure over the remaining implementation window in 2014–2020; the corresponding relationship in 2007–2013 is small and statistically indistinguishable from zero. Conversely, support for the cabinet responsible for programme design remains strongly associated with expenditure in 2007–2013 even after that cabinet has left office, but the relationship is substantially weaker in 2014–2020.

Higher cumulative expenditure in politically supportive regions could reflect reallocation or faster spending of previously allocated resources. To distinguish these margins, I examine terminal expenditure, direct measures of reallocation, and the timing of implementation. In 2014–2020, the positive association with current cabinet support persists through the terminal observed implementation year, when differences in spending dates within the observed window can no longer explain expenditure gaps. Direct measures of reallocation relative to the remaining Berlin distribution generally point in the same direction, although their precision varies across specifications. Measures of expenditure timing and implementation progress provide no evidence that political support accelerates spending and, if anything, suggest later implementation in more supportive regions. The evidence is thus more consistent with changes in where resources go than with faster expenditure alone.

Whether these political relationships undermine Cohesion Policy's objectives is a separate question. The Berlin Method provides an indicative allocation rather than an economically optimal distribution, and departures from it may reflect information that the formula does not capture. I therefore examine both adherence to the initial regional allocation and progress toward regional convergence. Observed expenditure closely follows the Berlin allocation in both periods, and the fitted contribution of cabinet support is associated with closer adherence to that benchmark. Yet greater adherence does not necessarily imply faster convergence. Under an assumed growth response, allocating resources strictly according to the Berlin Method would produce somewhat faster catch-up among less-developed regions than observed expenditure. The fitted contribution of cabinet support to this convergence gap is small and changes sign across periods. These accounting and calibration exercises do not provide a causal welfare ranking.

The findings illustrate why political relationships in rule-based redistribution cannot be understood from initial allocations alone. Programme design creates commitments that may outlast the government responsible for them, while implementation decisions can reflect the priorities of successors within the constraints they inherit. These relationships are consistent with the model but do not identify the causal effect of regulatory changes: the reforms coincided with other economic and institutional developments, and political support is not exogenously assigned.

Section 2 develops the delegation framework, and Section 3 describes the institutional setting. After introducing the data and reconstructing the Berlin allocation, I examine programme design in Section 5 and implementation in Section 6. Section 7 then considers allocation adherence and convergence. Lastly, Section 8 concludes.

2. Delegation Contracts and Political Adaptation

Political influence in a delegated policy depends on which decisions remain open and who exercises discretion over them. When a policy involves sequential decisions, earlier choices can constrain those made later, even when different governments are responsible for each stage. Tightening constraints on an earlier decision can therefore weaken the influence of the government that made it without necessarily increasing the influence of its successor.

Delegation is valuable because agents may possess information about local needs, available projects, and implementation constraints that is costly for the principal to acquire. However, agents may also pursue objectives that differ from those of the principal. Aghion and Tirole (1997) distinguish formal authority from

effective control over decisions, while Dessein (2002) shows why delegation to a better-informed agent can be valuable despite conflicting preferences. Institutional constraints must therefore balance the benefits of informed decisions against the possibility that agents use their discretion to pursue their own objectives.

I apply this framework to Cohesion Policy by treating the EU, represented by the European Commission in programme approval and oversight, as the principal and the Member State as the continuing institutional agent (Blom-Hansen, 2005). National governments exercising discretion can nevertheless change over a programme's lifetime. A government responsible for implementation inherits programmes and commitments established by its predecessors, and its ability to revise those decisions depends on the institutional constraints it faces. I abstract from additional layers of delegation within Member States and take the agreed EU regulatory framework as given.

2.1. Political Incentives under Institutional Delegation

Political incentives can shape the distribution of public resources through the decisions governments retain the authority to make. When these decisions occur sequentially, the final distribution may reflect the preferences of more than one government. Choices made during programme design can persist after the government responsible for them leaves office, while successor governments exercise discretion over the resources and decisions that remain available. The political influence associated with final expenditure therefore depends on both inherited commitments and the scope for subsequent adjustment.

Governments may value regional investment for its economic benefits but also for its contribution to electoral support, coalition maintenance, or political credit. These incentives can affect which programmes and projects receive resources without requiring governments to violate eligibility or financial-management rules. Dellmuth and Stoffel (2012), for example, find that domestic electoral incentives are reflected in the allocation of EU Structural Funds.

The connection between sequential decisions is important in delegation theory. Bester and Krähmer (2008) show how project selection can affect incentives at a subsequent stage. Here, the connection operates through the allocation embedded in an approved programme and the choices available during its implementation. To make these incentives explicit, consider a two-stage problem in which the European Commission establishes an initial regional allocation and the Member State subsequently makes decisions during programme design and implementation.

For simplicity, consider two regions within a Member State and normalize this initial allocation to zero.

A positive deviation for one region is then an equal negative deviation for the other, so the choice can be interpreted as redistribution within the national allocation.

Delegation is useful because the Member State has information about local needs, available projects, and implementation constraints that is costly for the Commission to acquire. Let z_t denote the economically justified deviation from the rule-based allocation at stage $t \in \{D, I\}$, where D denotes programme design and I implementation. This information is known to the Member State but is imperfectly observable or contractible for the Commission.

The Member State also values the political return from directing resources across regions. Let s_t denote regional political support for the government exercising discretion at stage t, relative to its support in the other region. Let β capture how political support affects the government's preferred allocation. Absent institutional constraints, the government's preferred regional deviation at stage t is

$$z_t + \beta s_t. \tag{2.1}$$

A positive relationship between governing-cabinet support and expenditure is a conditional prediction rather than a mechanical implication of political targeting. Which regions governments prefer depends on the electoral returns they expect from allocating resources to them. Dixit and Londregan (1996) show that political competition can generate either swing-voter or core-support targeting depending on parties' relative ability to deliver benefits. Evidence from EU funding likewise indicates that electoral institutions condition these incentives (Dellmuth et al., 2017).

2.2. Contract Design and Principal Oversight

Institutional rules shape political discretion by determining which choices governments can make and which earlier choices they can revise. In Alonso and Matouschek (2008), a principal facing an informed but biased agent can limit discretion by restricting the set of permissible decisions. Programme requirements, eligibility rules, and approval procedures can be understood in the same way: they constrain the alternatives among which governments choose. Administrative procedures can also shape subsequent decisions by determining how proposed changes are considered and approved (McCubbins et al., 1987). Cohesion Policy involves distinct decisions over where resources are directed and how they are programmed and implemented (Bachtler and Mendez, 2007), so the extent of government discretion can differ across stages of the policy process.

At programme design, let d denote the regional allocation embedded in the programme, expressed as a

deviation from the initial allocation. Let $\kappa_D \geq 0$ measure the tightness of programme-design constraints, with a larger κ_D corresponding to less Member State discretion at this stage. The design-stage government chooses d to maximize

$$U_D(d) = -\frac{1}{2}\left[d - (z_D + \beta s_D)\right]^2 - \frac{\kappa_D}{2} d^2. \tag{2.2}$$

The first term captures the government's preferred allocation given economic information and political incentives. The second captures, in reduced form, the institutional cost of departing from the initial allocation through programme design.

The optimal design-stage choice is

$$d^* = \frac{z_D + \beta s_D}{1 + \kappa_D}, \tag{2.3}$$

which implies

$$\frac{\partial d^*}{\partial s_D} = \frac{\beta}{1 + \kappa_D}. \tag{2.4}$$

As programme-design constraints become tighter, political support has less influence on the regional allocation embedded in the programme. Oversight can constrain some decisions more tightly than others. Audits, payment conditions, and programme approval can enforce eligibility and compliance with agreed programmes, but they cannot necessarily determine which eligible project should be selected or how every permissible programme adjustment should be made. The effectiveness of these controls also differs across instruments and administrative settings (Bachtler and Ferry, 2015; Mendez and Bachtler, 2024). The remaining discretion can therefore reflect political incentives, local information, administrative constraints, or changing economic conditions. During implementation, the government inherits the programme d^* but may retain some ability to change where resources ultimately go through project selection, programme amendments, and other implementation decisions. Let x denote the final regional deviation from the initial allocation, and let $\kappa_I \geq 0$ measure the rigidity of the inherited programme. A larger κ_I means that moving away from the approved programme is more difficult, while a smaller κ_I corresponds to greater implementation flexibility. The implementation government chooses x to maximize

$$U_I(x) = -\frac{1}{2}\left[x - (z_I + \beta s_I)\right]^2 - \frac{\kappa_I}{2}\left(x - d^*\right)^2. \tag{2.5}$$

The first term captures the current government's preferred allocation, based on current economic information and political incentives. The second captures the institutional cost of moving away from the programme

inherited from the design stage.

The optimal final allocation is

$$x^* = \frac{z_I + \beta s_I + \kappa_I d^*}{1 + \kappa_I}. \tag{2.6}$$

Substituting the design-stage choice gives

$$x^* = \frac{z_I + \beta s_I}{1 + \kappa_I} + \frac{\kappa_I}{1 + \kappa_I} \frac{z_D + \beta s_D}{1 + \kappa_D}. \tag{2.7}$$

The effect of current political support on the final allocation is

$$\frac{\partial x^*}{\partial s_I} = \frac{\beta}{1 + \kappa_I}, \tag{2.8}$$

while the effect of design-stage political support is

$$\frac{\partial x^*}{\partial s_D} = \frac{\beta \kappa_I}{(1 + \kappa_I)(1 + \kappa_D)}. \tag{2.9}$$

The central prediction follows from how these constraints are distributed across connected stages. When governments can pursue similar distributive objectives through programme design and subsequent implementation, tighter constraints on design weaken the relationship between design-stage political support and the final allocation. Greater implementation flexibility instead increases the magnitude of the relationship between current political support and the final allocation. As a result, current political support becomes relatively more important, even when implementation constraints remain unchanged. At the same time, a more rigid implementation stage preserves choices embedded at programme design, allowing design-stage political conditions to remain reflected in later outcomes.

This does not require political influence to move mechanically from one stage to another. If earlier programme commitments tightly constrain subsequent choices, or if the remaining implementation decisions offer little political value, tighter design rules can instead reduce the political relationship throughout the policy process. The framework predicts where political incentives are more likely to be reflected in outcomes conditional on the discretion available at each stage.

3. European Union Cohesion Policy

The European Union Cohesion Policy provides a useful setting to explore how politically motivated agents respond to changes in their discretion within a supranational system of delegation. The policy aims to reduce regional disparities, but Member States retain discretion during programme design and implementation, potentially under different national governments. The rules governing these decisions vary across programming periods, allowing the role of institutional constraints at different stages to be examined within the same policy.

Cohesion Policy is the EU's main investment policy and is implemented through a delegation structure referred to as shared management. The European Commission approves programmes and supervises compliance with EU rules, while Member States prepare programmes and manage their implementation through national and subnational authorities. Cohesion Policy also represents a substantial source of public investment: during 2014–2020, Cohesion Policy accounted for around 14% of total government investment across the European Union (European Commission, 2023b), while annual funding exceeded 2% of GDP in several beneficiary countries (Crucitti et al., 2022).

Cohesion Policy is embedded in the EU's Multiannual Financial Framework (MFF), which sets spending priorities and budget limits over a multi-year period, typically seven years. The regulatory framework is defined separately for each programming period. Compared with 2007–2013, the 2014–2020 framework strengthened requirements for programme design while introducing more limited changes to implementation rules.

3.1. Allocation, Programme Design, and Implementation

The allocation of Cohesion Policy resources begins with a rule-based regional distribution generated by the Berlin Method, while Member States retain discretion during programme design and implementation. Cohesion Policy operates primarily through three financial instruments: the European Regional Development Fund (ERDF), the European Social Fund (ESF), and the Cohesion Fund (CF). Since 1999, the fund allocation process has followed the Berlin Method (European Court of Auditors, 2019), a set of rules used to determine the distribution of Cohesion Policy funds across eligible countries and regions. Although specific parameters have varied across MFFs, the formula has remained relatively stable since its introduction for the 2000–2006 period. The method relies primarily on each region's relative GDP per capita to classify regions into eligibility categories and uses GDP per capita, population, and unemployment data to calculate funding shares. For

both the ERDF and ESF, NUTS2[1] regions form the basis of the territorial allocation of resources. In contrast, the Cohesion Fund is allocated at the national level and targets only the least developed Member States.

Importantly, the regional distribution implied by the Berlin Method is indicative rather than binding at the regional level, but it forms the basis for the allocations set at the Member State level. Member States must respect these broader allocations, while retaining discretion to depart from the underlying regional distribution when designing their programmes. Consequently, I map the regional distribution implied by the Berlin Method into the model as the initial allocation, normalized to zero. The programme-design choice d^* and the final allocation x^* are expressed as deviations from this initial distribution. Member State allocations can also reflect additional provisions agreed outside the formula.[2]

Once national allocations are set, Member States determine how these resources are organized through Operational Programmes (OPs), which are drafted by national authorities and approved by the European Commission in the framework of the National Strategic Reference Framework (NSRF), replaced by the Partnership Agreement in 2014–2020. OPs are detailed plans that specify how the funds will be used and must align with the EU's Cohesion Policy objectives and broader strategic goals. Member States nevertheless retain discretion in designing and structuring these programmes. It is not mandatory to create one OP per region or per fund; instead, Member States may choose the number, type, and scope of OPs—whether national, regional, or thematic.[3]

Once approved, Operational Programmes establish the planned distribution of resources and the programme structure within which implementation begins. Member States select and fund projects under each programme, monitor their execution, and report expenditure to the European Commission. The Commission verifies the reported expenditure and reimburses eligible costs. Operational Programmes can also be modified during the programming period, allowing Member States to revise planned expenditures and reallocate resources, subject to the rules governing programme amendments and, when required, Commission approval. Programme design and implementation therefore constitute two distinct margins through which Member States can influence the final distribution of Cohesion Policy resources.

A managing authority is a national, regional, or local authority or other body designated by the Member

[1]The Nomenclature of Territorial Units for Statistics (NUTS) is the EU's classification system for territorial units. It divides each country into three levels, with Level 2 referring to basic regions.

[2]Any additional funding allocated through these negotiations is reported separately from rule-based allocations, typically under the additional provisions sections of the relevant MFF regulation.

[3]Each programming period includes specific rules for OPs, but flexibility in programme design has been a consistent feature across programming periods.

State to manage an Operational Programme. Although managing authorities may operate at different levels of government, they exercise these responsibilities within the management and control system established by the Member State and under the supervision of the European Commission (European Commission, 2025). I therefore treat the Member State as the relevant agent and abstract from an additional layer of delegation between national governments and managing authorities.

The European Commission retains several instruments for supervising Member States, including programme approval, audits, interruptions or suspensions of payments, and financial corrections, although the specific procedures vary across programming periods. [4] These controls constrain Member States within the rules of Cohesion Policy but do not fully determine how they use the resources available to them. Member States retain meaningful choices over the distribution and composition of expenditure, and these choices can persist over time. Hansum (2025b), for example, documents substantial continuity in national Cohesion Policy budgetary choices across programming periods.

3.2. The 2007–2013 and 2014–2020 Programming Periods

The 2007–2013 and 2014–2020 programming periods differed in the institutional constraints placed on Member State discretion at different stages of Cohesion Policy. While the basic structure of shared management remained in place, the rules governing European Commission involvement in programme design and the revision of approved programmes changed between the two periods (Council of the European Union, 2006; European Parliament and Council of the European Union, 2013). During the 2007–2013 programming period, Member States retained substantial discretion during programme design. Operational Programmes were prepared by Member States within the National Strategic Reference Framework and then appraised and approved by the European Commission. Programmes generally covered a single Cohesion Policy objective and were financed by a single Fund, with restrictions on transfers across these categories (Council of the European Union, 2006). Within these requirements, Member States determined how their allocations were translated into programmes and distributed across regions, while remaining consistent with the EU's broader objectives.

Once Operational Programmes were approved, Member States could revise them following significant socioeconomic changes, changes in EU, national, or regional priorities, evaluation findings, or implementation difficulties. These revisions required a decision by the European Commission (Council of the European

[4] See Protection Measures

Union, 2006). In practice, programme revisions became increasingly common after the financial crisis. Reprogramming was used to respond to changes in economic conditions and policy needs, difficulties in securing national or regional cofinancing, and implementation and absorption problems. The Commission actively supported this process, and by 2014 around €45 billion, or 13% of Cohesion Policy funding, had been shifted across policy areas (European Commission, 2014; European Court of Auditors, 2018).

European Commission involvement in programme design increased during the 2014–2020 programming period. Member States were required to prepare Partnership Agreements setting out how Cohesion Policy resources would contribute to the Europe 2020 strategy, while Operational Programmes were subject to stronger thematic concentration requirements, ex ante conditionalities, and more explicit performance requirements (European Court of Auditors, 2017; European Parliament and Council of the European Union, 2013). The European Court of Auditors (2017) finds that programme negotiations resulted in funding being more closely targeted toward EU priorities. Compared with the previous period, this gave the Commission a larger role in shaping how Member States translated Cohesion Policy resources into programmes.

In contrast to the stronger requirements introduced at programme design, the 2014–2020 framework made more limited changes to the rules governing implementation. Member States continued to select projects within approved Operational Programmes and could request programme revisions, subject to European Commission approval. The new framework established a general procedure for justified amendments and provided specific possibilities for adjustment, including limited transfers between categories of regions and changes to certain indicative programme elements without a new Commission decision (European Parliament and Council of the European Union, 2013). These provisions allowed Member States to adjust their spending plans within established constraints, but did not fundamentally alter the structure of shared management or remove the restrictions on reallocating resources.

I represent these institutional differences through the stage-specific constraints in the model. The stronger European Commission involvement in programme design during 2014–2020 corresponds to

$$\kappa_D^{14} > \kappa_D^{07}, \tag{3.1}$$

while the more general procedure for revising approved programmes during implementation corresponds to

$$\kappa_I^{14} \leq \kappa_I^{07}. \tag{3.2}$$

A lower κ_I in 2014–2020 does not imply unrestricted implementation, since programme revisions continued to require European Commission approval. Under these conditions, the model predicts that design-stage political support becomes less important for the final allocation, while the influence of current political support remains unchanged or increases.

4. Empirical Framework and Measurement

I examine these predictions through the regional distribution of Cohesion Policy resources. Member States can use their discretion along several dimensions, including the type of investments financed, the projects selected, and the timing of expenditure. Because Cohesion Policy is strongly regionally targeted, the regional distribution provides a margin that can be observed consistently across both programming periods and stages of the policy. The Berlin Method provides a common reference for this analysis. Because it is determined before Member States design their programmes, both the distribution that emerges from programme design and subsequent expenditure during implementation can be considered relative to the same initial allocation.

The cross-period comparison is guided by the differences in discretion across programme design and implementation described above. These institutional differences generate stage-specific expectations about where political support should be reflected in expenditure, which the model formalizes. Because the regulatory changes were negotiated and coincided with other economic and institutional changes, the estimates do not identify the causal effect of the regulatory change itself. They instead describe whether political relationships vary across stages and institutional settings in the way implied by the distribution of discretion.

4.1. Data and Measurement

The analysis is conducted at the NUTS2 level and combines data on national parliamentary elections, Cohesion Policy resources, and regional socioeconomic characteristics for the 2007–2013 and 2014–2020 programming periods. These data allow me to measure regional political support, regional allocations and expenditure, and replicate the Berlin Method allocation. Because NUTS classifications change over time, I use the official NUTS classification in place when each programming period was designed. Across periods, regions with significant changes in their geographical boundaries are treated as distinct, while those with unchanged boundaries are considered the same regardless of changes in their names or NUTS codes.

4.1.1. Measuring Political Incentives. To measure political incentives in a comparable way across Member States, I focus on the support received by the national government across regions. Because Cohesion Policy is

strongly regionally targeted, differences in government support across regions provide a natural source of variation in the political incentives associated with the distribution of funds. Regional vote shares provide a common measure of support, but they cannot distinguish persuasion, mobilization, coalition interests, or the electoral value of particular projects. I therefore use them as a comparable measure of political support rather than as a measure of a particular electoral mechanism.

A natural way to measure regional political support would be to identify the political actors representing each region and their relationship with the national government. This is difficult to apply consistently because NUTS2 regions do not always correspond to administrative or political subdivisions of Member States or to electoral districts (Eurostat, 2026). Regional governments and elected officials therefore cannot be mapped consistently to the geographical units used by Cohesion Policy across the European Union.

National parliamentary elections provide a way to measure regional support for the national government across Member States. Most EU Member States have parliamentary systems, where the national government is formed from and remains accountable to parliament, or semi-presidential systems, where parliament still plays a central role in government formation and survival.[5] Parliamentary elections determine the composition of the legislature that forms or supports the national government, and their results can be observed at the NUTS2 level. Regional vote shares therefore provide a measure of support for the parties governing nationally that can be used consistently across the regional units relevant for Cohesion Policy.

For these reasons, I measure regional political support for a national governing cabinet as the combined vote share of its member parties in national parliamentary elections. I use electoral results from the EU-NED database (Schraff et al., 2023), which reports national parliamentary election results by political party at the NUTS2 level. I identify national governments and their party composition using ParlGov (Döring and Manow, 2024) and link parties across the two datasets using Party Facts (Döring and Regel, 2019). I define the leading governing party as the cabinet party holding the largest share of seats in the national parliament and use its support separately when decomposing cabinet support.

The timing of political support differs between programme design and implementation. At programme design, support is measured for the cabinet responsible for designing the programmes. During implementation, each calendar year is assigned to the cabinet that held office for the largest part of that year. Following ParlGov, each new cabinet is treated as a distinct government, even without a parliamentary election. In those cases,

[5] France, Lithuania, Poland, Portugal, and Romania are commonly classified as semi-presidential during the periods studied. Finland had moved substantially toward a parliamentary system following its 2000 constitutional reform. Cyprus is the exception, being the only Member State with a presidential system.

cabinet support is calculated using the parties composing the new cabinet and their vote shares in the election corresponding to the sitting legislature.

4.1.2. ERDF and ESF Funding Data. I focus on the European Regional Development Fund (ERDF) and the European Social Fund (ESF), which have an explicit regional dimension. For regional expenditure, I use the European Commission's official *Historic EU Payments – Regionalised and Modelled* database (European Commission, Directorate-General for Regional and Urban Policy, 2018). The dataset reports annual EU expenditure at the NUTS2 level by regionalizing Commission payment data and modelling when the underlying expenditure took place. I express regional expenditure in constant 2015 euros using a common European consumer price index.[6]

4.1.3. Regional Socioeconomic Data. I use regional socioeconomic data both to replicate the Berlin Method allocation and to account for differences in regional economic conditions that may independently affect the allocation and implementation of Cohesion Policy resources. The data come from ARDECO (Annual Regional Database of the European Commission) (European Commission, 2023a), which provides information on regional GDP, population, employment, and unemployment at the NUTS2 level.

4.2. Reconstructing the Berlin Method Allocation

The Berlin Method provides a benchmark for the EU's intended regional distribution. Although the regional allocation implied by the method is indicative, it captures the EU's initial allocation objective. Departures from that benchmark can reflect political preferences, but also local information, administrative capacity, or adaptation to economic conditions; they do not by themselves establish agency loss or illegality. Because this allocation is not directly observed at the NUTS2 level, I replicate the Berlin Method for the 2007–2013 and 2014–2020 programming periods to recover it.

The Berlin Method first classifies regions according to their level of development, measured primarily by GDP per capita in PPS relative to the EU average, and applies different allocation rules across categories. For the lowest-income regions, the allocation is based on the region's population and its GDP per capita gap relative to the EU average, adjusted for national income and supplemented by an unemployment premium. For higher-income regions, resources are distributed using weighted measures of population, unemployment,

[6]The modelling redistributes Commission payments across years to approximate the timing of expenditure on the ground. By construction, the modelled expenditures sum to the same total payments, so this step affects the estimated timing of expenditure rather than its cumulative amount (Lo Piano et al., 2018). The regionalisation to NUTS2 is a separate procedure and, when direct regional information is unavailable, may rely on apportioning rules.

employment, education, regional prosperity, and population density. The treatment of regions between these groups differs somewhat across programming periods: 2007–2013 used transitional support arrangements, while in 2014–2020 transition-region allocations were determined by interpolating between the aid intensities associated with less and more developed regions (Council of the European Union, 2006; European Parliament and Council of the European Union, 2013).

For each programming period, I replicate these allocation rules as closely as possible and use the resulting allocations to calculate each NUTS2 region's share within its Member State and region type. I do not use the euro amounts produced by the replication directly. Instead, I apply the replicated regional shares to the corresponding official approved amount for each Member State and region type. I then incorporate the additional provisions assigned to specific regions. The resulting regional allocations therefore reproduce exactly the official approved totals at the Member State and region-type level, while the replicated Berlin Method determines how those totals are distributed across NUTS2 regions. For comparability with observed expenditure, I also express these allocations in constant 2015 euros.

The benchmark also includes the additional provisions, which are not generated by the Berlin Method but form part of the initial allocation approved by the EU. Later technical adjustments are excluded because they revise this initial distribution after it was established.[7]

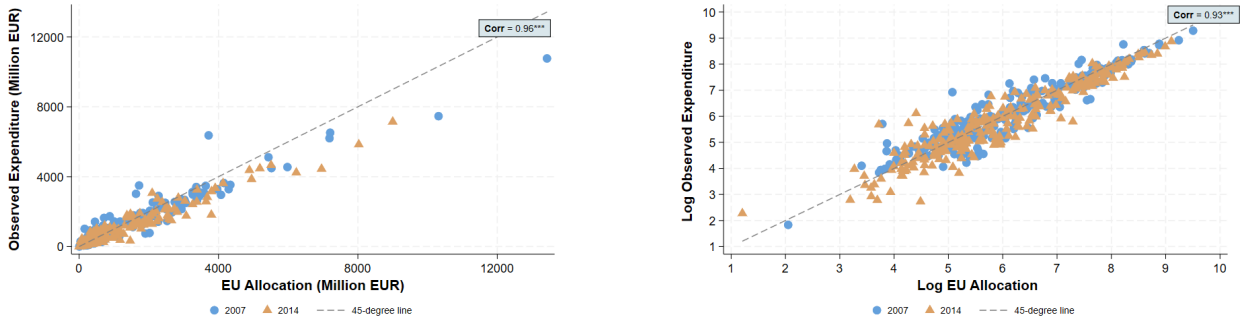
Two issues limit how precisely I can replicate the Berlin Method. Historical socioeconomic series can be revised retrospectively, so the values currently reported may differ from those available to the European Commission when the original allocations were calculated.[8] Some elements of the allocation rules also require interpretation. For example, in 2007–2013 the formula for Regional Competitiveness and Employment regions assigns weight to "low population density" without providing a precise definition of what qualifies as such (Council of the European Union, 2006).

Changes in NUTS classifications create an additional difficulty in reconstructing the allocation for the regional geography used in each programming period. I replicate each programming period using the NUTS2 geography in place when the programmes were designed. When the classifications used in currently available data do not match this geography, I reconstruct the corresponding historical regions whenever possible. In cases where an exact reconstruction is not possible but the relevant funding can still be assigned unambiguously,

[7] Both programming periods allowed later adjustments to the initial allocations based on updated economic data; these adjustments took place in 2010 for the 2007–2013 period and in 2016 for the 2014–2020 period (Council of the European Union, 2006, 2013).

[8] The GNI per capita in PPS measure used in the official allocation calculations is not available for the full period. I therefore use GNI per capita in PPP from the World Bank as the corresponding measure in the replication.

I assign it to the corresponding historical regions.[9] Further details on the replication procedure, assumptions, and treatment of specific cases are provided in Appendix B.



(a) Levels

(b) Logs

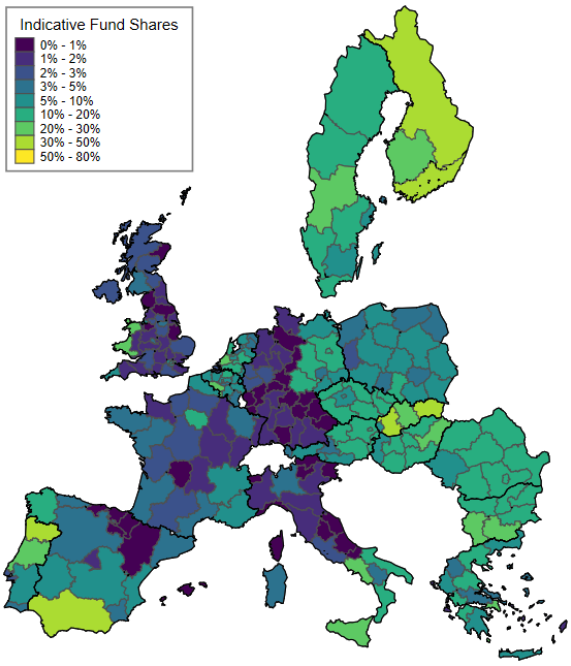
Figure 1: Observed ERDF and ESF Expenditure versus Replicated Berlin Allocation

Notes: Each point represents a NUTS2 region in the 2007–2013 or 2014–2020 programming period, using the corresponding regional classification. Panel (a) compares observed expenditure and the replicated Berlin allocation in millions of euros; Panel (b) reports their natural logarithms. The dashed 45-degree line indicates equality between observed expenditure and the Berlin allocation. Correlations are reported within each panel.

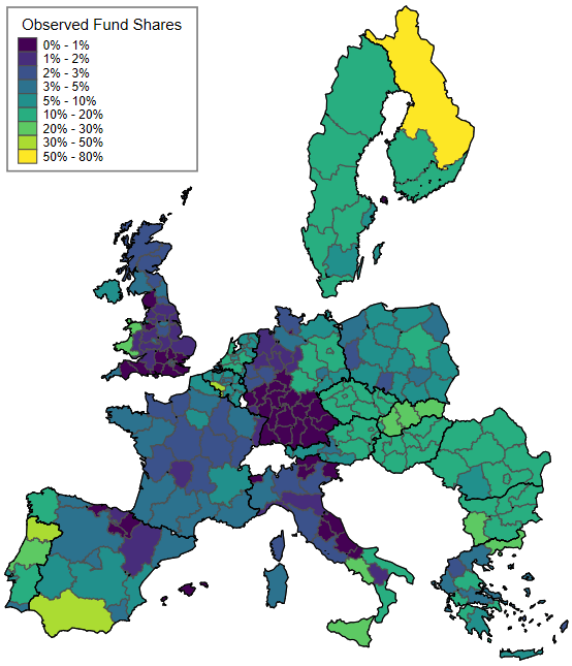
The replicated Berlin allocation is highly correlated with observed regional expenditure in both programming periods. Figure 1 shows that regions assigned larger initial allocations generally receive more resources, a relationship that holds across regions with substantially different funding levels (correlations of 0.96 in levels and 0.93 in logarithms). Figure 2 shows that the same pattern is present in the regional distribution of funds: the shares implied by the Berlin allocation broadly resemble the corresponding shares of observed expenditure in both periods.

The relationship is strong but imperfect: meaningful regional differences remain between observed expenditure and the Berlin allocation, indicating that the formula does not fully determine where resources are ultimately spent. It is precisely these departures that motivate the empirical analysis. I examine whether support for the government responsible for programme design and for governments subsequently managing implementation is associated with these departures.

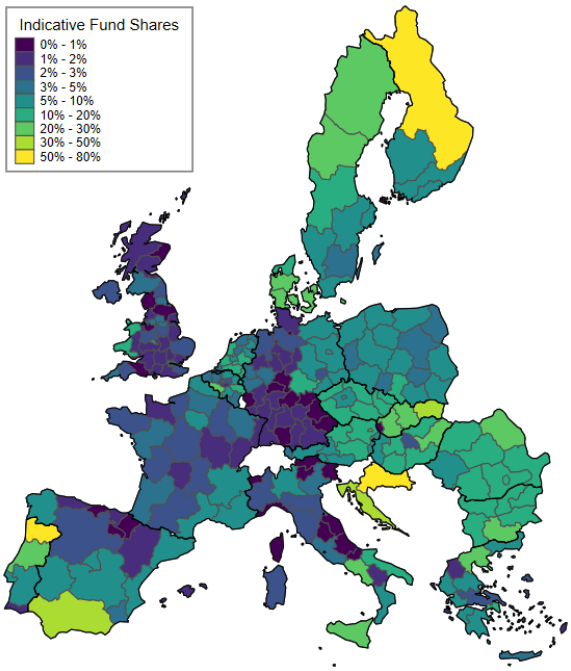
[9]For 2007–2013, the main cases affected by changes in NUTS classifications include Brandenburg, Chemnitz, and Leipzig in Germany; Etelä-Suomi, Helsinki-Uusimaa, Itä-Suomi, and Pohjois-Suomi in Finland; Cheshire and Merseyside in the United Kingdom; and the two historical NUTS2 regions of Ireland. For 2014–2020, the main case is Mayotte in France.



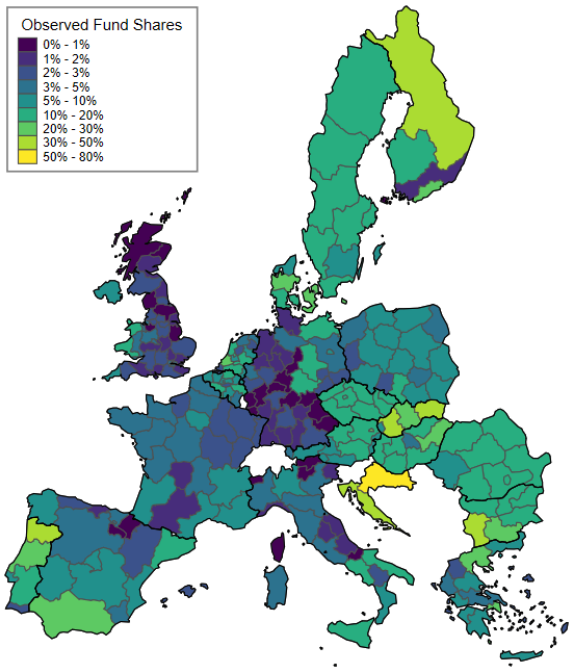
(a) 2007–2013: Replicated Berlin Shares



(b) 2007–2013: Observed Expenditure Shares



(c) 2014–2020: Replicated Berlin Shares



(d) 2014–2020: Observed Expenditure Shares

Figure 2: Replicated Berlin Allocation and Observed ERDF and ESF Expenditure Shares.

Notes: This figure compares the regional distribution implied by the replicated Berlin Method with observed ERDF and ESF expenditure for the 2007–2013 and 2014–2020 programming periods. Panels A and C show the replicated Berlin allocation shares, while Panels B and D show the corresponding observed expenditure shares. Non-contiguous and overseas regions are not shown for presentation purposes.

5. Political Incentives at Programme Design

Do political incentives shape the regional distribution of Cohesion Policy when national governments have discretion at programme design? I find that design-stage political support predicts higher expenditure relative to the Berlin allocation in 2007–2013, when Member States had greater room to shape programmes, but find little evidence of a comparable relationship in the preferred 2014–2020 specification, when greater European Commission involvement limited this margin. After the Berlin allocation is established, national governments translate those resources into Operational Programmes, making programme design their first opportunity to influence how those resources are distributed across regions.

Choices made at programme design can persist into final expenditure because the programmes approved at the beginning of the period constrain subsequent implementation and reallocation. Throughout this section, design-stage support therefore refers to support for the government responsible for programme design, while the outcome is observed expenditure relative to the Berlin allocation.

5.1. Empirical Strategy

I test whether design-stage political support, s_D, is associated with departures from the Berlin allocation and allow this relationship to differ across programming periods. I define design-stage political support as the combined regional vote share of parties participating in the national governing cabinet in office during programme design.[10]

This interpretation is more compelling if the Berlin allocation itself is unrelated to design-stage political support, conditional on the socioeconomic inputs that determine it. Because it is determined before Member States design their programmes, any political relationship that appears only in departures from it is more naturally associated with the discretion exercised afterward. Table 1 provides little evidence that design-stage political support predicts the Berlin allocation in either programming period after controlling for the Berlin-formula inputs. The coefficients are small and not statistically distinguishable from zero. I then examine whether design-stage political support predicts departures from the Berlin allocation in observed expenditure. I measure these departures using the ratio of regional expenditure to the Berlin allocation, making them comparable across regions, and estimate the following specification:

[10] I define the design-stage government as the government in office one month before the approval of the National Strategic Reference Framework in 2007–2013 or the Partnership Agreement in 2014–2020, capturing the government responsible for the preparation and negotiation of the programmes before their formal approval.

Table 1: Design-Stage Cabinet Support and the Replicated Berlin Allocation

	Replicated Berlin Allocation	
	2007–2013	2014–2020
Cabinet support	-3.253	-2.731
	(3.399)	(4.197)
	[0.347]	[0.590]
Observations	516	
Countries	20	

Notes: The dependent variable is the replicated Berlin allocation in levels (EUR million). The two columns report period-specific coefficients from a pooled regression. Cabinet support is the combined regional vote share of parties in the national governing cabinet responsible for programme design. The specification controls for the Berlin-formula inputs interacted with region type, W_{ip}, and includes country-by-programming-period and region-type-by-programming-period fixed effects. Standard errors clustered at the country level are reported in parentheses. Wild-cluster bootstrap p-values, based on 19,999 repetitions, are reported in brackets.

$$Y_{ip} = \beta_p Support_{ip} + W'_{ip}\pi + X'_{ip}\gamma + \alpha_{cp} + \delta_{rp} + \varepsilon_{ip}, \qquad p \in \{07, 14\}. \tag{5.1}$$

where Y_{ip} is the log of regional expenditure relative to the Berlin allocation for region i in programming period p,

$$Y_{ip} = \log\left(100 \times \frac{F_{ip}}{B_{ip}}\right),$$

with F_{ip} denoting observed regional expenditure and B_{ip} the Berlin allocation.[11] I express relative expenditure in logs so that departures from the Berlin allocation are measured proportionally around the initial allocation. This also gives the coefficients a proportional interpretation and reduces the influence of observations with particularly large relative expenditure. $Support_{ip}$ is design-stage political support, measured as the combined regional vote share of the parties in the national governing cabinet responsible for programme design. Political support enters separately for each programming period, allowing its relationship with relative expenditure to differ between 2007–2013 and 2014–2020.

Departures from the Berlin allocation can also reflect regional characteristics that influence Member States' funding decisions. The Berlin-formula controls W_{ip} account flexibly for the GDP-per-capita, population, and unemployment inputs to the initial allocation, allowing their coefficients to differ by region type. Separately,

[11] The ratio is multiplied by 100 to express regional expenditure as a percentage of the Berlin allocation. This rescaling does not affect the estimated coefficients once the outcome is expressed in logs.

X_{ip} includes the logs of regional GDP per capita and unemployment measured in the year before the programming period begins, as well as regional population growth over the preceding five years, rather than the pre-period population level. GDP per capita accounts for differences in regional development that can affect both the need for Cohesion Policy resources and a region's capacity to translate those resources into expenditure (Becker et al., 2013). Unemployment captures local economic conditions that may independently affect the priority Member States assign to a region, while prior population growth captures changes in regional scale and potential demand. If these characteristics are also correlated with design-stage political support, omitting them would attribute part of their relationship with expenditure to political incentives. Measuring these controls before the programming period begins also ensures that they cannot themselves respond to expenditure realized under the programme.

Beyond these pre-period differences, temporary economic conditions may affect where expenditure is directed if governments respond to adverse regional shocks during implementation. Directly controlling for contemporaneous GDP or unemployment is problematic because Cohesion Policy expenditure can itself affect regional economic outcomes (Crescenzi and Giua, 2020; Becker et al., 2013). I instead use the programme-period averages of the cyclical components of regional GDP growth and unemployment, extracted with a Christiano–Fitzgerald band-pass filter over business-cycle frequencies of eight years (Christiano and Fitzgerald, 2003). This isolates short-run fluctuations more closely associated with the economic conditions governments face during implementation, while reducing the extent to which the controls capture longer-run changes that may themselves result from Cohesion Policy expenditure.

Finally, the fixed effects isolate regional comparisons within common national and institutional environments while accounting for differences associated with Cohesion Policy development categories. The specification includes country-by-programming-period fixed effects, α_{cp}, to absorb national factors that are common to all regions within a programming period, including differences in overall funding, institutions, and implementation capacity. Region-type-by-programming-period fixed effects, δ_{rp}, account for systematic differences across less developed, transition, and more developed regions that arise from the rules governing Cohesion Policy and from their different positions in the allocation system. The remaining variation therefore compares regions facing the same national environment while accounting for differences associated with their development category in each programming period. ε_{ip} denotes the error term. I allow errors to be correlated across regions within the same Member State by clustering standard errors at the country level, reflecting their exposure to common national programme-design decisions and political conditions.

The coefficient β_p is period-specific, allowing the relationship between political support and relative expenditure to differ between 2007–2013 (β_{07}) and 2014–2020 (β_{14}). Given the lower programme-design constraint, κ_D, and greater implementation rigidity, κ_I, in 2007–2013, Equation (2.9) predicts a stronger relationship in that period than in 2014–2020. Since the analysis focuses on regional redistribution within Member States, I restrict the sample to countries with at least two NUTS2 regions. The final sample covers 20 countries, with 254 regional observations in 2007–2013 and 262 in 2014–2020.[12] Table 2 reports summary statistics for the estimation sample.

Within this sample, both relative expenditure and design-stage political support vary substantially across regions in each programming period. Expenditure relative to the Berlin allocation is close to 100 percent on average, but the distribution is wide and includes a small number of regions with very large departures from the initial allocation. Political support has a similar dispersion across periods. The zero values reflect regions where the parties making up the national cabinet receive no measured regional vote share. I now turn to whether this variation is systematically related to design-stage political incentives.

5.2. Main Results

The results support the central design-stage prediction: political support is positively associated with departures from the Berlin allocation in 2007–2013, when Member States had greater design discretion, while the relationship is small and imprecisely estimated in 2014–2020. Table 3 reports the estimates from Equation 5.1. In the preferred specification in column (3), the coefficient on cabinet support in 2007–2013 is positive, at 0.012, and statistically significant at the 1 percent level. A 10-percentage-point increase in cabinet support is associated with approximately 13 percent higher expenditure relative to the Berlin allocation. A change of this size corresponds to about 0.68 standard deviations in cabinet support and is economically meaningful given the scale of Cohesion Policy funding. For a region with the mean observed regional expenditure in 2007–2013, this corresponds to roughly EUR 130 million.

In 2014–2020, by contrast, there is little evidence of a comparable relationship between design-stage political support and departures from the Berlin allocation. The coefficient on design-stage cabinet support is -0.001 and is not statistically distinguishable from zero. The difference with the 2007–2013 coefficient is statistically significant in the preferred specification, with the wild-cluster bootstrap equality test rejecting

[12]Twenty-one Member States satisfy the multi-region requirement in 2007–2013. Ireland is excluded because changes in its NUTS classification prevent a reliable reconstruction of the Berlin allocation, while Slovenia is excluded because the political data required to construct design-stage support are not available in EU-NED. Croatia enters in 2014–2020 following its accession to the EU. Changes in the NUTS classification across programming periods also affect the number and definition of regional units.

Table 2: Design-Stage Summary Statistics by Programming Period

Variable	N	Mean	SD	Minimum	Maximum
Panel A: 2007–2013					
Observed expenditure (EUR million, 2015 EUR)	254	1014.708	1376.333	6.252	10769.641
Berlin allocation (EUR million, 2015 EUR)	254	1088.046	1606.801	7.772	13427.406
Expenditure relative to Berlin allocation (%)	254	111.670	67.165	32.876	681.841
Cabinet support (%)	254	48.168	14.755	0.000	81.332
Regional GDP per capita, 2006 (EUR, 2015 prices)	254	28212	13208	4407	94704
Regional unemployment rate, 2006 (%)	254	8.459	4.429	2.585	28.501
Regional population growth, prior five years (%/year)	254	0.318	0.722	-2.046	3.949
Regional GDP-growth cycle	254	-0.022	0.218	-1.114	0.796
Regional unemployment-rate cycle	254	-0.070	0.087	-0.443	0.252
Berlin-reference GDP per capita (PPS)	254	18852	7592	3863	57675
Berlin-reference population	254	1851104	1519123	26650	11487271
Berlin-reference unemployment rate (%)	254	9.079	4.986	2.600	30.100
Panel B: 2014–2020					
Observed expenditure (EUR million, 2015 EUR)	262	773.017	1066.001	9.743	7147.453
Berlin allocation (EUR million, 2015 EUR)	262	938.961	1357.362	3.343	8999.715
Expenditure relative to Berlin allocation (%)	262	98.814	67.487	17.232	714.060
Cabinet support (%)	262	49.721	15.691	0.000	83.438
Regional GDP per capita, 2013 (EUR, 2015 prices)	262	28488	13926	4546	101228
Regional unemployment rate, 2013 (%)	262	10.954	7.157	2.511	36.221
Regional population growth, prior five years (%/year)	262	0.205	0.603	-1.887	2.980
Regional GDP-growth cycle	262	0.292	0.274	-0.464	1.385
Regional unemployment-rate cycle	262	0.031	0.161	-0.435	0.805
Berlin-reference GDP per capita (PPS)	262	23950	8817	7073	75207
Berlin-reference population	262	1864972	1555431	28007	11852851
Berlin-reference unemployment rate (%)	262	9.505	5.325	2.600	30.100

Notes: Regional GDP-growth and unemployment-rate cycles are programme-period averages of the cyclical components extracted using a Christiano–Fitzgerald band-pass filter over frequencies of eight years. Pre-programme variables refer to 2006 and 2013, respectively; population growth is the annualized rate over the preceding five years. Berlin-reference variables are the historical inputs used to reconstruct the indicative regional allocation, rather than pre-programme controls. Regional real GDP per capita is in 2015 euros.

at the 1 percent level ($p < 0.001$). This contrast is consistent with Equation (2.9): under the hypothesized institutional differences, κ_D and higher κ_I in 2007–2013 would both strengthen the relationship between design-stage political support, s_D, and the final allocation.

5.2.1. Robustness. The evidence that design-stage cabinet support predicts relative expenditure in 2007–2013 is robust across alternative specifications. Cross-period differences remain precisely estimated in most specifications, although they are less precise in the within-region comparison. I examine whether the results

Table 3: Design-Stage Cabinet Support and Relative Expenditure

	(1)	(2)	(3)
Cabinet support			
2007–2013	-0.001	0.012***	0.012***
	(0.002)	(0.002)	(0.002)
	[0.528]	[0.0006]	[0.0006]
2014–2020	-0.005***	-0.002	-0.001
	(0.001)	(0.003)	(0.003)
	[0.0098]	[0.508]	[0.592]
$\beta_{07} = \beta_{14}$	0.0017	< 0.001	< 0.001
Socioeconomic controls	No	No	Yes
Fixed effects	No	Yes	Yes
Observations	516	516	516
Countries	20	20	20
Adjusted R^2	0.045	0.366	0.373

Notes: The dependent variable is the log of expenditure relative to the Berlin allocation. Columns (2)–(3) include Berlin-formula inputs interacted with region type; column (3) also includes the additional socioeconomic controls. Standard errors clustered at the country level are reported in parentheses. Wild-cluster bootstrap p-values based on 19,999 replications are reported in brackets and determine significance stars for the political-support coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The final row reports wild-cluster bootstrap p-values for the Wald test of equality between β_{07} and β_{14}.

depend on alternative choices about the outcome, weighting, timing, identifying variation, or the influence of individual Member States.

Alternative choices about weighting, the expenditure window, and the treatment of large departures generally preserve the positive 2007–2013 relationship. The results are more sensitive when the coefficient on the Berlin allocation is estimated freely: the 2007–2013 relationship weakens and the 2014–2020 coefficient turns negative, although the difference across periods remains statistically significant. This specification shifts the focus from proportional departures from Berlin to expenditure conditional on the allocation and its underlying socioeconomic inputs. The changes may reflect the overlap between these controls or different political incentives, including the targeting of less supportive regions and the influence of successor governments. Appendix Tables A1 and A2 report these results.

A more demanding within-region comparison preserves the positive 2007–2013 relationship but weakens the evidence that the coefficients differ across programming periods. The NUTS2 fixed-effects specification

tests whether the design-stage relationship also appears when identification comes from changes within the same region across programming periods. Appendix Table A3 shows that the 2007–2013 coefficient remains positive and statistically significant in the main log-ratio specification, while the 2014–2020 coefficient is positive but imprecisely estimated. Under this specification, however, the difference between the two period-specific coefficients is no longer statistically distinguishable from zero. The evidence that political support is associated with the regional distribution in 2007–2013 is therefore more robust than the precise magnitude of the change between programming periods.

The baseline cross-period contrast is also not driven by any single Member State. In leave-one-country-out regressions, the cross-period difference remains negative and statistically significant in all 20 country omissions under log-ratio, level-ratio, and PPML specifications using country-clustered Wald inference. Appendix Table A5 summarizes these estimates.

5.2.2. Exploratory Electoral Heterogeneity. The baseline specification uses combined support for the governing cabinet as the common measure of political support across countries. I also examine the contributions of the leading governing party and junior coalition parties separately.

Coalition governments provide a natural decomposition because the electoral interests of the governing cabinet need not coincide with those of its largest party alone. Table 4 reports specifications with leading-party and junior-coalition support jointly, alongside leading-party-only specifications. In 2007–2013, both governing-party components are positively associated with expenditure after adding socioeconomic controls, while the leading-party-only relationship is weaker. In 2014–2020, neither component is precisely estimated. These results suggest that the cabinet-level association is not attributable exclusively to the largest governing party.

A second exploratory exercise examines electoral margins and regional alignment, defined for the leading party in the governing cabinet. I interact its absolute regional electoral margin with an indicator for whether it wins the region. In 2007–2013, the association with relative expenditure becomes more favorable as the leading governing party's winning margin grows and less favorable as its margin of defeat grows. The corresponding estimates for 2014–2020 are imprecise. This pattern is suggestive of core-support targeting rather than targeting electorally competitive regions, although electoral margins are an imperfect measure of these incentives. Appendix Table A6 reports the estimates.

The main design-stage evidence points to a political relationship when Member States had greater

Table 4: Decomposing Design-Stage Cabinet Support

	Leader and junior parties		Ruling-party support	
	(1)	(2)	(3)	(4)
Ruling-party support				
2007–2013	0.006	0.011***	0.004	0.007
	(0.003)	(0.002)	(0.003)	(0.004)
	[0.118]	[0.003]	[0.192]	[0.106]
2014–2020	-0.003	-0.002	-0.003	-0.002
	(0.004)	(0.003)	(0.004)	(0.003)
	[0.498]	[0.445]	[0.509]	[0.459]
Junior-coalition support				
2007–2013	0.009	0.019***		
	(0.006)	(0.004)		
	[0.197]	[0.0011]		
2014–2020	-0.003	0.001		
	(0.004)	(0.005)		
	[0.532]	[0.776]		
$\beta^J_{07} = \beta^J_{14}$	0.282	0.025		
$\beta^R_{07} = \beta^R_{14}$	0.029	0.002	0.067	0.018
Socioeconomic controls	No	Yes	No	Yes
Fixed effects	Yes	Yes	Yes	Yes
Observations	516	516	516	516
Countries	20	20	20	20
Adjusted R^2	0.187	0.373	0.184	0.359

Notes: The dependent variable is the log of expenditure relative to the Berlin allocation. Columns (1) and (2) jointly include support for the leading governing party and the remaining junior coalition parties; columns (3) and (4) use support for the leading governing party alone. The main cabinet-support specification is reported in Table 3. Standard errors clustered at the country level are reported in parentheses. Wild-cluster bootstrap p-values based on 19,999 replications are reported in brackets and determine significance stars for the political-support coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Rows of the form $\beta_{07} = \beta_{14}$ report wild-cluster bootstrap p-values for the Wald test of equality between the corresponding period-specific coefficients; superscripts R and J denote leading-party and junior-coalition support, respectively.

discretion over programme design, while evidence of a comparable relationship is weaker under the more restrictive 2014–2020 framework. The next section turns to whether political incentives are instead reflected in the implementation of the programmes once design-stage discretion is more constrained.

6. Political Incentives During Implementation

Political influence does not disappear once programmes are approved: its relationship with expenditure instead depends on the discretion available to governments during implementation. National governments oversee project selection and expenditure and can modify programme allocations, subject to programme rules and, for reallocations, Commission approval. Unlike at programme design, however, these decisions are made within programmes inherited from earlier governments and after part of the available funding may already have been spent.

For successor governments, the implementation results differ across periods: current political support is associated with subsequent expenditure in 2014–2020, while design-stage political conditions remain more important in 2007–2013. I then examine whether this implementation-stage relationship reflects changes in the regional distribution of funding or differences in expenditure timing. The evidence is more consistent with reallocation than with faster expenditure, with the timing results providing, if anything, suggestive evidence of later expenditure.

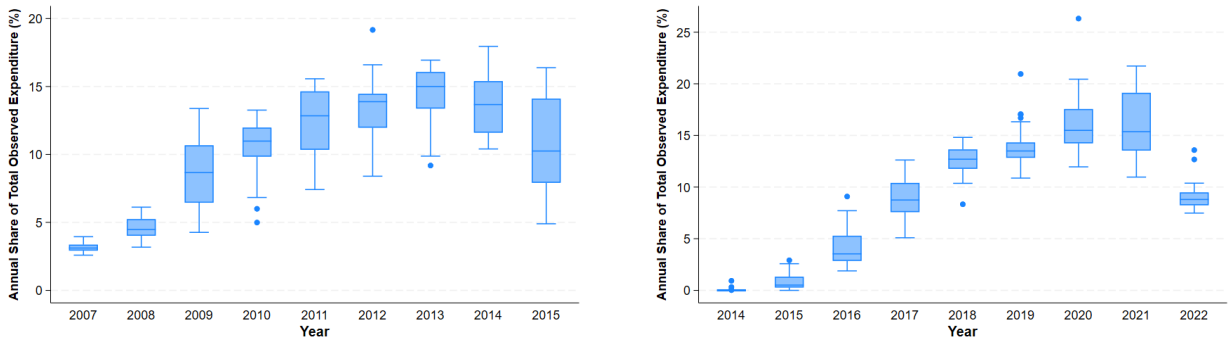
6.1. Empirical Strategy

Implementation is inherently dynamic: governments inherit earlier decisions, while their own decisions may take time to appear in expenditure. Allocations are also finite and programmes have fixed endpoints, so the empirical strategy must account both for how far implementation has already progressed and for effects that materialize over subsequent years.

The timing of expenditure makes a same-year specification particularly restrictive. Figure 3 shows the annual share of total observed expenditure in each programming period. In both 2007–2013 and 2014–2020, expenditure is strongly backloaded: relatively little is spent in the early years, while a much larger share is realized later in the programme.[13] This pattern makes it difficult to associate political conditions in a given year only with expenditure realized in that same year, since decisions taken during implementation may materialize with delay.

A second feature of the data requires implementation to be followed in programme time rather than calendar time. The expenditure data distinguish the programming period to which each payment belongs. This matters because implementation windows overlap in calendar time. Expenditure associated with the 2007–2013

[13] Expenditure can extend beyond the nominal programming period because EU commitments remain available for implementation for additional years under the $N + 2$ and $N + 3$ decommitment rules, allowing expenditure from the 2007–2013 and 2014–2020 programmes to be observed after 2013 and 2020, respectively.



(a) 2007–2013 programming period

(b) 2014–2020 programming period

Figure 3: Timing of Cohesion Policy Expenditure by Programming Period

programmes continues to be observed after 2013, while expenditure for the 2014–2020 programmes begins before the earlier programmes have fully closed. For example, 2014 and 2015 appear in both programming periods, but they refer to different sets of programme resources. Calendar time and programme time do not coincide one-to-one in the implementation data. I therefore follow regional expenditure separately within each programming period rather than treating the observations as a single calendar-year panel. Each region contributes observations to both programming periods in overlapping calendar years, with expenditure assigned to the programme from which it originates.

I address both features by following expenditure from each base year through the remaining implementation window within its programming period. Expenditure is observed through 2015 for 2007–2013 and 2022 for 2014–2020, so earlier base years are observed over more subsequent horizons. For each region i, programming period p, and base year t, let T_p denote the common terminal year and let h denote the horizon from the base year. The available horizons are $h = 0, \ldots, T_p - t$. Let $f_{ip\tau}$ denote expenditure in year τ. Cumulative expenditure over horizon h is

$$C_{ipth} = \sum_{\tau=t}^{t+h} f_{ip\tau}, \qquad h = 0, \ldots, T_p - t.$$

At the terminal horizon, $h = T_p - t$, cumulative expenditure includes all observed expenditure from the base year through the common end of the implementation window.

To measure cumulative expenditure relative to the Berlin benchmark, I scale it by the region's Berlin allocation for the programming period. Let B_{ip} denote this allocation. The outcome of interest is

$$R_{ipth} = 100 \times \frac{C_{ipth}}{B_{ip}},$$

which measures cumulative expenditure from the base year through horizon h relative to the region's total Berlin allocation.

At any point during implementation, the government in office inherits both expenditure already realized and the programme designed at the beginning of the period. Prior expenditure directly limits the resources that remain available to be implemented or reallocated, and design-stage political support may remain associated with the regional distribution even after political control changes. I account for both sources of path dependence by controlling for prior expenditure and design-stage political support. I measure prior expenditure at base year t as

$$E_{ipt} = 100 \times \frac{\sum_{\tau<t} f_{ip\tau}}{B_{ip}}.$$

Thus, E_{ipt} measures expenditure realized before t relative to the region's Berlin allocation. It can exceed 100, indicating that cumulative expenditure has already surpassed the region's indicative Berlin allocation.

I relate the political conditions faced by the government in base year t to expenditure over subsequent horizons $t + h$, controlling for both expenditure already realized and political conditions inherited from programme design. I estimate

$$\begin{aligned} Y_{ipth} = \beta_p CurrentSupport_{ipt} + \delta_p DesignSupport_{ip} + \rho A_{ipt} + W'_{ip}\pi \\ + L'_{ipt}\gamma + Z'_{ip}\eta + \mathcal{F}_{ipth} + \varepsilon_{ipth}, \qquad p \in \{07, 14\}. \end{aligned} \tag{6.1}$$

To keep the interpretation of the coefficients comparable to the design-stage analysis, I preserve a proportional interpretation of the outcome whenever possible. Cumulative expenditure can nevertheless be zero, making a logarithmic transformation infeasible. Y_{ipth} is obtained by applying the inverse hyperbolic sine transformation to cumulative expenditure relative to the Berlin allocation; the transformation is defined at zero and approximates the logarithm for positive values. A_{ipt} is obtained by applying the same transformation to E_{ipt}, so that prior expenditure enters the specification in a comparable functional form.

As Chen and Roth (2024) discuss, the inverse hyperbolic sine is scale dependent and behaves differently close to zero. This concern is less severe here because the outcome is measured in percentage points of the

Berlin allocation, giving it a common and substantively meaningful scale across regions and programming periods. I nevertheless examine whether the results depend on this transformation using alternative functional forms in the robustness analysis.

$CurrentSupport_{ipt}$ is the combined regional vote share of the parties in the national governing cabinet in office in base year t, s_I, while $DesignSupport_{ip}$ is support for the government responsible for programme design, s_D, and remains fixed within region and programming period. L_{ipt} includes lagged regional GDP per capita, GDP growth, and unemployment, capturing the economic conditions observed by the government in office at base year t when making implementation decisions. W_{ip} is the vector of Berlin-formula inputs interacted with region type defined in Section 5.1; these controls enter columns (3)–(5) of Table 6. Z_{ip} contains the additional pre-period socioeconomic controls used in the design-stage analysis—regional GDP per capita and unemployment measured before each programming period, together with regional population growth over the preceding five years—capturing the information available to the government responsible for programme design.

The term $\mathcal{F}_{ipth}$ collects NUTS2, programming-period, region-type-by-period, horizon, country-by-base-year, country-by-outcome-year, country-by-period, and programme-year fixed effects. NUTS2 fixed effects absorb persistent differences across regions, while horizon fixed effects account for the mechanical increase in cumulative expenditure as regions are followed for longer periods. Country-by-base-year fixed effects absorb national conditions when the government is observed, and country-by-outcome-year fixed effects absorb national conditions in the year in which expenditure is measured. Programme-year fixed effects account for common differences associated with being at the same point in the programming cycle, even when those years correspond to different calendar dates across periods. Standard errors are clustered at the NUTS2 level.

β_{07} and β_{14} capture the relationship between current political support and cumulative expenditure from t through subsequent years. Because current political support does not vary across horizons for a given base year, these coefficients summarize its association with cumulative expenditure pooled across the available horizons. δ_{07} and δ_{14} capture the corresponding relationship for design-stage support. Given the lower implementation constraint, κ_I, in 2014–2020, I expect the relationship with current political support to be stronger in that period, while the greater implementation rigidity in 2007–2013 should preserve a stronger relationship with design-stage support.

The stacked-horizon structure gives earlier base years more observations because they can be followed over more subsequent outcome years. This weighting reflects the implementation problem: governments

observed earlier have a longer remaining window for project selection, programme revisions, and reallocations to affect expenditure, and a larger share of funding remains available. I examine the sensitivity of the results to the horizon structure in the robustness analysis.

As in the design-stage analysis, I exclude Ireland and Slovenia for the reasons discussed above. I also exclude countries with only one NUTS2 region, since they provide no within-country regional variation. Two additional restrictions are specific to implementation. First, I exclude base-year observations in which the government responsible for programme design remains in office. In these cases, current and design-stage political support refer to the same government, making the two relationships difficult to distinguish.[14]

The second restriction addresses the Covid-19 period. I restrict base years to 2019 or earlier so that political support is measured before the Covid-era rule changes, while retaining subsequent expenditure through the end of the implementation window. The 2014–2020 implementation window extends into years when emergency measures substantially increased the flexibility available for programme reallocation and reprogramming.[15] Dropping expenditure after 2019 would remove a large share of observations and, given the concentration of expenditure toward the end of the programming period documented above, would also exclude expenditure associated with decisions made before the pandemic.[16]

After these restrictions, the sample contains 13,244 region-by-base-year-by-horizon observations across 261 NUTS2 regions in 20 Member States: 7,382 observations from 2007–2013 and 5,862 from 2014–2020.[17] Table 5 reports summary statistics for the underlying region-year data, counting each region-year once rather than repeatedly across subsequent horizons. Regional cabinet support varies considerably in each programming period. Mean current cabinet support is 46.6 percent in 2007–2013 and 39.8 percent in 2014–2020, while design-stage support averages 47.2 and 49.5 percent, respectively. Prior expenditure in the implementation sample averages about 13 percent of the Berlin allocation in 2014–2020, compared with 50 percent in 2007–2013, although this difference also reflects the distribution of base years in each sample. Figure 3 provides more direct evidence of backloading, with expenditure rising more sharply toward the end

[14]The design-stage government is also the first implementation government in 17 of 18 countries in 2007–2013 and 18 of 19 countries in 2014–2020; the exceptions are the United Kingdom and Bulgaria, respectively.

[15]The Covid-19 emergency measures expanded Member States' flexibility by allowing transfers of 2020 resources across the ERDF, ESF, and Cohesion Fund and across categories of regions, relaxing thematic-concentration requirements for programme amendments, and allowing a temporary EU co-financing rate of up to 100 percent (European Parliament and Council of the European Union, 2020).

[16]The Covid response also introduced REACT-EU, which provided additional resources through the 2014–2020 ERDF and ESF under a distinct crisis-response framework. Hansum (2025a) finds no evidence that national governments allocated REACT-EU resources toward politically opportune regions.

[17]Only two observations, or 0.015 percent of the sample, have zero cumulative expenditure. Both correspond to UK regions in 2015 at the initial horizon, and no terminal-horizon observation has zero cumulative expenditure.

of the 2014–2020 implementation window.

Table 5: Implementation-Stage Summary Statistics by Programming Period

Variable	N	Mean	SD	Minimum	Maximum
Panel A: 2007–2013					
Base-year expenditure / Berlin allocation (%)	1,774	13.939	10.027	1.097	109.637
Current cabinet support (%)	1,774	46.569	15.276	0.000	84.555
Design-stage cabinet support (%)	1,774	47.233	14.639	0.000	81.332
Prior expenditure relative to Berlin allocation (%)	1,774	50.192	48.482	0.000	573.344
Regional real GDP per capita (2015 EUR)	1,774	28256	13660	4446	107492
Regional GDP growth (%)	1,774	0.621	3.148	-16.295	14.465
Regional unemployment rate (%)	1,774	9.656	6.080	1.923	37.047
Pre-programme regional GDP per capita (2015 EUR)	1,774	28103	13241	4407	94704
Pre-programme regional unemployment rate (%)	1,774	8.270	4.290	2.585	28.501
Regional population growth, prior five years (%/year)	1,774	0.347	0.708	-2.046	3.949
Berlin-reference GDP per capita (PPS)	1,774	18862	7614	3863	57675
Berlin-reference population	1,774	1848742	1510775	26650	11487271
Berlin-reference unemployment rate (%)	1,774	8.879	4.955	2.600	30.100
Panel B: 2014–2020					
Base-year expenditure / Berlin allocation (%)	1,034	10.948	9.492	0.000	134.272
Current cabinet support (%)	1,034	39.844	13.388	0.000	84.555
Design-stage cabinet support (%)	1,034	49.453	15.655	0.000	83.438
Prior expenditure relative to Berlin allocation (%)	1,034	12.561	15.388	0.000	148.493
Regional real GDP per capita (2015 EUR)	1,034	29884	14513	4750	116909
Regional GDP growth (%)	1,034	2.031	1.992	-8.773	13.293
Regional unemployment rate (%)	1,034	7.815	5.715	1.271	31.271
Pre-programme regional GDP per capita (2015 EUR)	1,034	27988	13891	4546	101228
Pre-programme regional unemployment rate (%)	1,034	11.254	7.126	2.511	36.221
Regional population growth, prior five years (%/year)	1,034	0.229	0.621	-1.887	2.980
Berlin-reference GDP per capita (PPS)	1,034	23512	8805	7073	75207
Berlin-reference population	1,034	1873118	1563986	78866	11852851
Berlin-reference unemployment rate (%)	1,034	9.804	5.293	2.700	30.100

Notes: Summary statistics count each region–base-year once, rather than once for each outcome horizon. Base-year and prior expenditure are expressed as percentages of the region's Berlin allocation; prior expenditure is cumulative expenditure realized before the base year. Cabinet support is the combined regional vote share of parties in the corresponding governing cabinet. Regional real GDP per capita is expressed in 2015 euros. Population growth is annualized over the five years preceding each programming period. Berlin-reference variables are the historical inputs used to reconstruct the indicative regional allocation.

6.2. Main Results

The results support the central implementation-stage prediction: current political support is positively associated with cumulative expenditure in 2014–2020, when implementation provided a relatively more

important margin of discretion, but not in 2007–2013. Table 6 reports the estimates from Equation 6.1. In the preferred specification in column (5), the coefficient on current cabinet support in 2014–2020 is positive, at 0.005, and statistically significant at the 5 percent level. A ten-percentage-point increase in cabinet support is associated with approximately 5 percent higher cumulative expenditure as the programme progresses through its remaining implementation years. In 2007–2013, the coefficient is close to zero and not statistically distinguishable from zero. A Wald test rejects equality of the two coefficients across programming periods ($p = 0.015$).

Table 6: Cabinet Support and Cumulative Expenditure Across Horizons

Variable	(1)	(2)	(3)	(4)	(5)
Current cabinet support					
2007–2013	-0.003***	-0.000	-0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
2014–2020	0.005	0.007***	0.006**	0.005**	0.005**
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)
Design-stage cabinet support					
2007–2013	0.015***	0.010***	0.009***	0.008***	0.009***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
2014–2020	0.004	0.002	0.002	0.002	0.003
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)
Prior expenditure / Berlin allocation (asinh)		0.651***	0.581***	0.582***	0.561***
		(0.044)	(0.043)	(0.043)	(0.041)
$\beta_{07} = \beta_{14}$	0.051	0.005	0.017	0.036	0.015
$\delta_{07} = \delta_{14}$	0.017	0.022	0.041	0.067	0.054
Benchmark controls	No	No	Yes	Yes	Yes
Lagged socioeconomic controls	No	No	No	Yes	Yes
Pre-period socioeconomic controls	No	No	No	No	Yes
Observations	13,244	13,244	13,244	13,244	13,244
Clusters	261	261	261	261	261
Adjusted R-squared	0.913	0.948	0.952	0.953	0.954

Notes: The dependent variable is the inverse hyperbolic sine of cumulative expenditure relative to the Berlin allocation. Clustered standard errors at the NUTS2 level are reported in parentheses. All specifications include NUTS2, programming-period, region-type-by-period, horizon, country-by-base-year, country-by-outcome-year, country-by-period, and programme-year fixed effects. Current economic controls include lagged regional GDP per capita, GDP growth, and unemployment. Berlin-formula inputs interacted with region type are included in columns (3)–(5). Pre-period socioeconomic controls include regional GDP per capita, unemployment, and population growth over the preceding five years. The rows $\beta_{07} = \beta_{14}$ and $\delta_{07} = \delta_{14}$ report p-values from Wald tests of equality across programming periods.
Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

The difference in the current-support coefficients is consistent with the role of the implementation

constraint, κ_I, in the model. During implementation, the government currently managing the programme does not choose from an unrestricted allocation: it inherits the programmes approved at design, the expenditure already realized, and the resources still available. The lower κ_I in 2014–2020 leaves greater scope for current political support to be reflected in subsequent expenditure, while the absence of a comparable relationship in 2007–2013 is consistent with the more restricted scope for revising programmes during that period.

The design-stage coefficients show at the same time that inherited programme choices continue to matter. In 2007–2013, the coefficient on support for the government responsible for programme design is 0.009 and statistically significant at the 1 percent level. In 2014–2020, the coefficient is smaller, at 0.003, and is not statistically distinguishable from zero. The cross-period equality test is marginally above the 5 percent threshold ($p = 0.054$). Together with the positive coefficient on prior expenditure, these estimates show that implementation takes place within a distribution already shaped by earlier programme and expenditure decisions.

These results highlight two features of delegated implementation. Earlier decisions persist, so authority exercised at programme design can remain visible in expenditure after the government responsible has left office. At the same time, when implementation leaves greater effective discretion, current political incentives can be reflected in subsequent expenditure. The cumulative-expenditure estimates, however, do not show whether this relationship reflects changes in the final regional distribution or in the pace at which resources are spent.

6.3. Reallocation and the Timing of Expenditure

The positive relationship between current political support and cumulative expenditure in 2014–2020 can arise through two distinct margins: governments can change where resources ultimately go or when those resources are spent. The model focuses on the first margin, while the pace at which resources are implemented may provide an additional margin of adjustment.

The two margins cannot be separated directly at each point in the implementation process. I observe expenditure and the Berlin allocation, but not a year-by-year planned regional distribution of the resources that remain. Higher expenditure for a region at an intermediate horizon can therefore reflect either resources being redirected toward that region or faster implementation of resources already available there. I use complementary measures to examine each margin separately.

6.3.1. Reallocation. If political support changes where funding ultimately goes, the cumulative-expenditure relationship should persist at the terminal observed horizon, when differences in timing within the observed window can no longer explain regional expenditure gaps. At this horizon, the observed regional distribution is the closest available counterpart to the final allocation, x^*, considered in the model. I examine reallocation in two ways. First, for each base year t, I relate political support to expenditure realized from t through the end of the implementation window. Differences in terminal cumulative expenditure then capture differences in the amount of resources ultimately reaching the region over the remaining implementation window.

I also examine departures from the remaining Berlin allocation by comparing each region's subsequent expenditure with the amount implied by its share of the country's remaining Berlin allocation, after subtracting expenditure already realized. A region's remaining Berlin allocation is set to zero once its original allocation has been exhausted. I define the difference in euros and normalize it by the region's original Berlin allocation, rather than measuring it as a percentage-point difference in country expenditure shares. I use four versions of this comparison that differ in their treatment of scale and extreme observations.[18]

I estimate the following specification for the terminal outcomes, using one observation per region, programming period, and base year:

$$\begin{aligned} Q_{ipt} = \beta_p CurrentSupport_{ipt} + \delta_p DesignSupport_{ip} + \rho A_{ipt} + W_{ip}'\pi \\ + L_{ipt}'\gamma + Z_{ip}'\eta + \mathcal{F}_{ipt} + \varepsilon_{ipt}, \qquad p \in \{07, 14\}. \end{aligned} \tag{6.2}$$

where Q_{ipt} denotes the terminal-horizon outcome: cumulative expenditure in column (1) and the direct reallocation measures in columns (2)–(5). The term $\mathcal{F}_{ipt}$ collects NUTS2, programming-period, region-type-by-period, country-by-base-year, country-by-period, and programme-year fixed effects. All specifications use one terminal observation per region–programming-period–base-year and otherwise follow the preferred implementation specification.

The terminal-horizon estimates show that the implementation-stage relationship is not only a relationship

[18] Let $M_{ipt} = \max\{B_{ip} - \sum_{\tau<t} f_{ip\tau}, 0\}$ denote region i's remaining Berlin allocation and $s^B_{ipt} = M_{ipt}/\sum_{j\in c(i)} M_{jpt}$ its share of the country's remaining Berlin allocation. Let $E_{ipt} = \sum_{\tau=t}^{T_p} f_{ip\tau}$ denote expenditure from base year t to the terminal year, $C_{cpt} = \sum_{j\in c} E_{jpt}$ the corresponding country total, and $D_{ipt} = E_{ipt} - s^B_{ipt} C_{c(i)pt}$ the region's excess expenditure in euros. The four outcomes are: (i) $\operatorname{asinh}(100 D_{ipt}/B_{ip})$; (ii) $100 D_{ipt}/B_{ip}$; (iii) outcome (ii) winsorized at the 1st and 99th percentiles; and (iv) the symmetric deviation

$$200 \frac{D_{ipt}}{E_{ipt} + s^B_{ipt} C_{c(i)pt}},$$

defined when the denominator is positive. Positive values indicate greater subsequent regional expenditure than implied by its remaining Berlin allocation.

Table 7: Cabinet Support and Expenditure Reallocation

	Terminal cumulative	Reallocation			
	Expenditure	Asinh	Levels	Winsorized	Symmetric
	(1)	(2)	(3)	(4)	(5)
Current cabinet support					
2007–2013	0.001	0.016***	0.217**	0.226**	-0.238
	(0.001)	(0.005)	(0.105)	(0.089)	(0.163)
2014–2020	0.006***	0.049**	0.436*	0.530***	0.872***
	(0.002)	(0.021)	(0.229)	(0.177)	(0.270)
Design-stage cabinet support					
2007–2013	0.008***	0.035	0.461	0.450**	1.370***
	(0.002)	(0.024)	(0.323)	(0.218)	(0.352)
2014–2020	0.002	0.037*	-0.176	-0.195	0.292
	(0.002)	(0.019)	(0.205)	(0.171)	(0.230)
$\beta_{07} = \beta_{14}$	0.014	0.098	0.339	0.086	0.002
$\delta_{07} = \delta_{14}$	0.016	0.932	0.047	0.023	0.014
Current economic controls	Yes	Yes	Yes	Yes	Yes
Pre-period socioeconomic controls	Yes	Yes	Yes	Yes	Yes
Observations	2,808	2,808	2,808	2,808	2,808
Clusters	261	261	261	261	261
Adjusted R^2	0.944	0.822	0.765	0.824	0.790

Notes: Standard errors clustered at the NUTS2 level are reported in parentheses. Column (1) uses the inverse hyperbolic sine of terminal cumulative expenditure relative to the Berlin allocation. Let E denote subsequent regional expenditure, C the corresponding national total, s^B the region's share of the remaining Berlin allocation (floored at zero after subtracting prior expenditure), and B its original Berlin allocation. Columns (2)–(5) use, respectively, $\text{asinh}[100(E - s^B C)/B]$, $100(E - s^B C)/B$, this percentage measure winsorized at the 1st and 99th percentiles, and $200(E - s^B C)/(E + s^B C)$. Thus columns (2)–(4) measure original-allocation-normalized excess euros, not country-share percentage-point differences. Prior expenditure enters in inverse-hyperbolic-sine form in every column. All columns use one terminal observation per region, period, and base year. All specifications include NUTS2, programming-period, region-type-by-period, country-by-base-year, country-by-period, and programme-year fixed effects. Current and pre-period socioeconomic controls follow Equation 6.1. The rows $\beta_{07} = \beta_{14}$ and $\delta_{07} = \delta_{14}$ report p-values from cross-period Wald tests.
Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

with the timing of expenditure. Column (1) of Table 7 measures cumulative expenditure through the end of the observed implementation window, substantially reducing the scope for differences in expenditure timing to explain regional expenditure gaps. The main political pattern nevertheless remains: current political support matters more in 2014–2020, while design-stage support matters more in 2007–2013. The discretion exercised during implementation appears to extend beyond determining how quickly an inherited allocation is spent and to affect where resources ultimately go.

The direct reallocation measures generally point in the same direction, although their precision varies across specifications. Columns (2)–(5) compare subsequent regional expenditure with the euro amount implied by the region's share of the remaining national Berlin allocation, normalizing excess euros by the region's original allocation where relevant. Combined with the terminal-horizon result, they provide evidence consistent with reallocation during implementation. The 2014–2020 coefficient on current cabinet support is positive across all four measures, but is more precisely estimated for some transformations than others. Some direct reallocation measures are also positively associated with current cabinet support in 2007–2013, so this margin is not exclusive to the later period.

6.3.2. Timing of Expenditure. The previous subsection examines the regional distribution of resources, the margin emphasized in the model. A second possible margin during implementation is the pace at which those resources are spent. If the 2014–2020 implementation-stage relationship reflects acceleration rather than reallocation, politically supported regions should realize the resources that ultimately reach them earlier in the remaining implementation window. I examine this in two ways.

The first measure summarizes when expenditure is realized between base year t and the end of the implementation period. For each region, I calculate the expenditure-weighted average timing of expenditure over this window and compare it with the same measure for the other regions in the country. I define the difference so that positive values indicate earlier expenditure relative to the rest of the country.[19]

A complementary measure tracks, at each nonterminal horizon, the share of a region's eventual post-base-year expenditure already realized. I use this measure directly and also construct versions that compare

[19] For region i, the expenditure-weighted average horizon is

$$\bar{h}_{ipt} = \frac{\sum_{\tau=t}^{T_p} (\tau - t) f_{ip\tau}}{\sum_{\tau=t}^{T_p} f_{ip\tau}}.$$

I construct the same measure for the other regions in the country and define the timing advantage as the average timing for those regions minus $\bar{h}_{ipt}$. In the baseline measure, the timing of the other regions is weighted by their expenditure; I also construct an alternative that gives each region equal weight.

implementation progress with other regions in the same country.[20] The two timing measures map directly into the specifications introduced above. The average-timing measure provides one observation for each region, programming period, and base year, so I estimate Equation 6.2 unchanged, replacing the reallocation outcome with the timing measure. The implementation-progress measure instead varies across horizons. I therefore return to Equation 6.1, replacing cumulative expenditure with implementation progress and excluding the terminal horizon, where progress is mechanically complete. The political variables, controls, and corresponding fixed effects otherwise remain the same.

The timing results provide no evidence that cabinet support accelerates expenditure. Negative associations are more pronounced in 2007–2013 than in 2014–2020. Columns (1)–(3) of Table 8 use the average timing of expenditure between t and the end of the implementation period. All three coefficients are negative and statistically significant in 2007–2013, whereas those for 2014–2020 are negative but imprecisely estimated. Since positive values correspond to earlier expenditure, the 2014–2020 estimates point, if anything, toward later implementation rather than acceleration.

Columns (4)–(6) show the same pattern using implementation progress before the terminal horizon. Current cabinet support is associated with lower progress in 2007–2013 across all three measures, with coefficients significant at the 10 percent level, while the 2014–2020 estimates are negative but imprecise. The design-stage coefficients are small and statistically imprecise in most timing specifications.

Across both timing measures, cabinet support does not predict faster implementation in 2014–2020. In 2007–2013, higher cabinet support is associated with later implementation. The positive relationship between current support and cumulative expenditure is difficult to reconcile with acceleration alone. Combined with the terminal-horizon and direct reallocation results, the evidence points primarily to reallocation as the margin through which current political incentives are reflected during implementation.

[20] For region i, implementation progress at horizon h is

$$P_{ipth} = \frac{\sum_{\tau=t}^{t+h} f_{ip\tau}}{\sum_{\tau=t}^{T_p} f_{ip\tau}}.$$

The terminal horizon is excluded because $P_{ipt,T_p-t} = 1$ by construction. The relative measures compare this progress with that of other regions in the same country, while the sixth outcome measures implementation progress relative to time. Higher values indicate earlier implementation.

Table 8: Cabinet Support and the Timing of Expenditure

	Timing advantage (years)			Implementation progress		
	Leave-one-out	Population weighted	Equal-region	Equal-region	Leave-one-out	Progress / time
	(1)	(2)	(3)	(4)	(5)	(6)
Current cabinet support						
2007–2013	-0.003***	-0.004***	-0.003***	-0.039*	-0.038*	-0.036*
	(0.001)	(0.001)	(0.001)	(0.020)	(0.021)	(0.020)
2014–2020	-0.001	-0.002	-0.001	-0.035	-0.035	-0.030
	(0.001)	(0.001)	(0.001)	(0.024)	(0.024)	(0.023)
Design-stage cabinet support						
2007–2013	0.001	-0.001	0.001	0.019	0.017	0.019
	(0.001)	(0.002)	(0.001)	(0.038)	(0.038)	(0.036)
2014–2020	-0.001	-0.000	-0.001	0.021	0.019	0.017
	(0.001)	(0.001)	(0.001)	(0.031)	(0.031)	(0.029)
$\beta_{07} = \beta_{14}$	0.168	0.054	0.142	0.901	0.938	0.867
$\delta_{07} = \delta_{14}$	0.532	0.563	0.524	0.977	0.968	0.970
Current economic controls	Yes	Yes	Yes	Yes	Yes	Yes
Pre-period socioeconomic controls	Yes	Yes	Yes	Yes	Yes	Yes
Population weights	No	Yes	No	No	No	No
Observations	2,808	2,808	2,808	10,436	10,436	10,436
Clusters	261	261	261	261	261	261
Adjusted R^2	0.391	0.443	0.281	0.263	0.353	0.981

Notes: Standard errors clustered at the NUTS2 level are reported in parentheses. Columns (1)–(3) measure the timing of expenditure between the base year and the end of the implementation period; positive values indicate earlier expenditure relative to other regions in the same country. Column (1) is the baseline measure, column (2) uses the same measure and weights the regression by regional population, and column (3) gives each other region equal weight when constructing relative timing. Columns (4)–(6) use nonterminal horizons and measure implementation progress. Columns (4) and (5) compare regional progress with other regions using equal-region and leave-one-out measures, respectively, while column (6) uses an implementation-progress-to-time measure. Positive values indicate earlier implementation.

Columns (1)–(3) include NUTS2, programming-period, region-type-by-period, country-by-base-year, country-by-period, and programme-year fixed effects. Columns (4)–(6) additionally include horizon and country-by-outcome-year fixed effects. All specifications include current economic and pre-period socioeconomic controls and prior expenditure in inverse-hyperbolic-sine form. The rows $\beta_{07} = \beta_{14}$ and $\delta_{07} = \delta_{14}$ report p-values from Wald tests of equality across programming periods.

Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

6.4. Robustness

The implementation results are generally robust to changes in how and when expenditure is measured, but more sensitive to the governments included in the sample and the regional variation used for estimation.

Restricting expenditure to shorter horizons leaves the main relationships largely unchanged (Appendix Tables A7 and A8). The findings also remain similar when I use logarithms or PPML instead of the inverse hyperbolic sine transformation (Appendix Table A9). When expenditure enters without these transformations, the differences between periods become less precisely estimated, partly reflecting the influence of unusually large observations. Limiting their influence restores some of the earlier results, although not all differences remain statistically significant.

The results are also largely preserved under alternative weighting, controls for prior expenditure, and expenditure windows (Appendix Table A10). A more important change occurs when I include governments that were also responsible for programme design. For these observations, current and design-stage support refer to the same government, making their separate relationships with expenditure harder to distinguish. The estimated association with current support becomes smaller, and the difference between periods is no longer statistically significant.

The relationship with current political support in 2014–2020 is also sensitive to the regional comparison. Removing NUTS2 fixed effects weakens the association, while introducing NUTS2-by-period fixed effects reduces it further (Appendix Tables A11 and A12). The latter specification relies on political changes within the same region and programming period, excluding persistent regional differences that may themselves reflect earlier allocation decisions. Thus, while the difference between periods generally remains, the magnitude of the 2014–2020 relationship is less robust than the baseline estimates suggest.

Finally, excluding Member States one at a time does not reverse the direction of the cross-period differences (Appendix Table A13). Their statistical significance is less stable, particularly for design-stage support, and depends on how expenditure is measured.

7. Allocation Adherence and Regional Convergence

National governments may exercise discretion in response to domestic political incentives without necessarily moving Cohesion Policy expenditure away from the EU's objectives. To examine this possibility, I consider two dimensions: adherence to the indicative Berlin allocation and regional convergence. The first asks how closely expenditure follows the initial territorial benchmark; the second considers whether the allocation

favors growth in less-developed regions relative to other regions. These criteria need not coincide, and neither comparison provides a welfare ranking of the regulatory changes. In particular, the Berlin allocation is an indicative policy benchmark, not an estimated socially optimal distribution.

I compare observed expenditure with two counterfactual distributions. The first reallocates the same national funding totals according to the Berlin Method. The second isolates the fitted contribution of within-country differences in cabinet support: I set the relevant regional support measure to the country mean in the corresponding regression specification, retain the other fitted components and the original residuals, and reconstruct regional expenditure subject to the fixed national funding envelope. For 2007–2013, the comparison concerns support for the government responsible for programme design. For 2014–2020, it concerns current support for successor governments during implementation, leaving expenditure associated with the design-stage government and inherited commitments unchanged. Country funding envelopes remain fixed. The scenario comparisons cover 260 regions in 2007–2013 and 270 in 2014–2020; the political adjustments apply where the corresponding regression-based contribution is available, while other expenditure remains at its observed value. These are regression-based allocation scenarios rather than estimates of the causal effect of removing political incentives.

7.1. Adherence to the Berlin Allocation

I measure adherence using formula distance: the minimum share of national funding that would need to be redistributed across regions to reproduce the Berlin allocation. Formally, let s^k_{rc} be the expenditure share of region r within country c under scenario k, s^B_{rc} the corresponding Berlin share, and E_c the fixed country funding envelope. Formula distance is[21]

$$L^k = 100 \frac{\sum_c E_c \left(\frac{1}{2} \sum_r \left| s^k_{rc} - s^B_{rc} \right| \right)}{\sum_c E_c}. \tag{7.1}$$

Table 9 shows that reproducing the Berlin allocation would require redistributing approximately 10 percent of national funding across regions in either programming period, with little difference between them. More interestingly, when regional cabinet support is equalized in the fitted scenarios, the resulting distribution moves farther from Berlin in both periods. Political incentives, therefore, need not work against

[21] Country-level expenditure shares are normalized to the same national envelope as the Berlin allocation. Formula distance is zero by construction under the strict Berlin scenario.

the EU's initial allocation rule: the regional differences associated with cabinet support are, in these scenarios, associated with closer adherence to it. The contribution is modest, however, and the sensitivity range includes zero in 2007–2013.

Table 9: Adherence to the Berlin Allocation under Alternative Scenarios

	2007–2013 Design-stage support	2014–2020 Implementation-stage support
Observed allocation (baseline)	9.92	9.65
Uniform cabinet support	10.19	10.01
Sensitivity range	[9.90, 10.64]	[9.74, 10.34]
Fitted political contribution	-0.28	-0.36
Sensitivity range	[-0.72, 0.02]	[-0.70, -0.10]

Notes: Entries report formula distance in percentage points: the minimum share of a country's fixed funding envelope that must be redistributed across regions to reproduce the Berlin allocation, aggregated across countries. Smaller values indicate closer adherence. "Fitted political contribution" is the observed distance minus the distance under uniform cabinet support; negative values indicate closer adherence under the observed allocation. Sensitivity ranges vary the estimated political-support coefficient over its conventional clustered 95% interval, holding other fitted terms fixed. They are not welfare confidence intervals. The 2014–2020 scenario includes COVID-era implementation. The comparisons cover 260 NUTS2 regions in 2007–2013 and 270 in 2014–2020.

7.2. Implications for Regional Convergence

Greater adherence to the Berlin allocation does not necessarily imply faster convergence between less-developed and other regions. To examine this second dimension, I translate differences in regional funding across scenarios into annual GDP-per-capita growth using a common response to Cohesion Policy transfers. Following the back-of-the-envelope calculation in Becker et al. (2010), I assume that an additional EUR 100 in annual transfers per resident raises annual growth by 1.1 percentage points. Because the allocations cover seven years, I annualize the funding differences before applying this response.[22]

Table 10 shows that allocating resources strictly according to Berlin would imply somewhat faster convergence than under observed expenditure in both programming periods. Under the assumed growth response, the annual growth advantage of less-developed regions would be approximately 0.10 percentage

[22] For scenario $k \in \{B, N\}$, where B denotes Berlin and N uniform cabinet support, let a_r^k be full-programme funding per resident and g_r^O observed annualized growth. I compute

$$g_r^k = g_r^O + \theta \frac{a_r^k - a_r^O}{7 \times 100},$$

where the central response is $\theta = 1.1$, with 0.8 and 1.4 as sensitivity values. For each allocation, the convergence gap is $C^k = \bar{g}^k_{\text{LD}} - \bar{g}^k_{\text{Other}}$, using pre-period population weights and defining "Other" as transition and more-developed regions. The sensitivity ranges also vary the political coefficient over its conventional clustered 95% interval when applicable. The exercise holds growth responses constant across regions and abstracts from spillovers.

points greater in 2007–2013 and 0.13 percentage points greater in 2014–2020. Thus, even though observed expenditure follows Berlin relatively closely, the remaining departures matter for the distribution of resources between less-developed and other regions.

The fitted political contribution, however, accounts for only a small part of this difference. Equalizing regional cabinet support would slightly increase the growth advantage of less-developed regions in 2007–2013, but slightly reduce it in 2014–2020. This contrasts with the adherence results, where the fitted political contribution brings expenditure closer to Berlin in both periods. Political incentives can therefore be associated with greater adherence to the initial allocation without necessarily favoring convergence.

Table 10: Regional Growth and Convergence under Alternative Allocations

Scenario	Less-developed growth (%)	Other regions growth (%)	Convergence gap (pp)	Sensitivity range for gap (pp)
Panel A: 2007–2013 — design-stage support				
Observed allocation (baseline)	1.397	0.098	1.299	–
Berlin allocation	1.463	0.067	1.395	[1.369, 1.422]
Uniform cabinet support	1.404	0.095	1.309	[1.303, 1.317]
Fitted political contribution	-0.007	0.003	-0.010	[-0.018, -0.004]
Panel B: 2014–2020 — implementation-stage support				
Observed allocation (baseline)	2.802	1.162	1.640	–
Berlin allocation	2.901	1.130	1.771	[1.735, 1.807]
Uniform cabinet support	2.799	1.163	1.636	[1.631, 1.639]
Fitted political contribution	0.003	-0.001	0.004	[0.001, 0.009]

Notes: Mean annual log GDP-per-capita growth is reported in percent. "Other regions" combines transition and more-developed regions. The convergence gap is the population-weighted growth difference between less-developed and other regions, in percentage points per year; larger values indicate faster catch-up. The central scenario assumes 1.1 percentage points of annual growth per EUR 100 of annual funding per resident. Sensitivity ranges for the gap vary this response from 0.8 to 1.4 and, where relevant, the political-support coefficient over its conventional clustered 95% interval; they are scenario ranges, not confidence intervals for welfare. "Fitted political contribution" is observed minus uniform-support growth or convergence. The 2014–2020 scenario includes COVID-era implementation. The comparisons cover 260 NUTS2 regions in 2007–2013 and 270 in 2014–2020.

8. Conclusion

How do politically motivated governments respond when institutional rules change where they retain discretion? In multilevel systems of governance, common rules constrain government decisions, but leave room for discretion during policy design and implementation. These decisions are connected over time, and governments responsible for implementation may inherit choices made by their predecessors. EU Cohesion

Policy provides a setting to examine how political incentives are reflected in expenditure when institutional constraints differ across these decisions. I compare the 2007–2013 and 2014–2020 programming periods, during which Member States faced stronger requirements at programme design while retaining discretion during implementation.

The findings suggest that institutional constraints shape which governments' political support is reflected in regional expenditure. In 2007–2013, when Member States had greater discretion over programme design, a ten-percentage-point increase in support for the design-stage cabinet is associated with approximately 13 percent higher expenditure relative to the Berlin allocation. This relationship is small and statistically indistinguishable from zero in 2014–2020, when programme design became more constrained. During implementation, current cabinet support is associated with approximately 5 percent higher cumulative expenditure over the remaining implementation window in 2014–2020, while the corresponding relationship in 2007–2013 is small and statistically indistinguishable from zero. Conversely, design-stage political support remains more strongly associated with expenditure in 2007–2013, even after the government responsible for programme design has left office. These patterns are consistent with the delegation framework: earlier political choices can persist through inherited commitments, while successor governments exercise discretion over the decisions that remain available to them.

During implementation, political incentives may affect both the regional distribution of resources and the timing of expenditure. Distinguishing these margins matters because greater expenditure in politically supportive regions can reflect faster implementation of existing allocations or changes in where resources ultimately go. The evidence points primarily toward changes in the regional distribution. In 2014–2020, the positive relationship with current cabinet support persists through the terminal observed implementation year, and direct measures of reallocation generally point in the same direction. Some reallocation measures also show positive associations in 2007–2013. Measures of expenditure timing and implementation progress provide little evidence that political support accelerates spending and, if anything, suggest later implementation in more supportive regions.

The regional distribution of expenditure also matters for Cohesion Policy's objectives. Member States may exercise discretion in response to both political incentives and economic conditions, making it relevant to examine how observed expenditure compares with the EU's intended allocation. In both periods, observed expenditure closely follows the Berlin allocation, and the fitted contribution of cabinet support is associated with somewhat closer adherence to that benchmark. Its contribution to regional convergence, under an

assumed growth response, is small and changes sign across periods.

Overall, the findings highlight the importance of considering how institutional rules distribute discretion across connected decisions. The differences across programming periods are consistent with the model, although the regulatory changes coincided with other economic and institutional developments, political support is not exogenously assigned, and some cross-period comparisons are sensitive to specification choices. Earlier political choices can persist when programmes are difficult to revise, while implementation discretion creates scope for successor governments' priorities. Rules that constrain one decision can leave room for political influence elsewhere in the policy process. Understanding delegation requires following both the decisions governments inherit and the decisions they remain able to make.

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A. Tables

Table A1: Design-Stage Cabinet Support: Alternative Specifications

	Population weighted (1)	Unrestricted Berlin coefficient (2)	Pre-COVID expenditure (3)
Cabinet support			
2007–2013	0.011**	0.005	0.012***
	(0.004)	(0.003)	(0.002)
	[0.035]	[0.305]	[0.0006]
2014–2020	0.003	-0.005**	-0.001
	(0.005)	(0.002)	(0.003)
	[0.706]	[0.025]	[0.717]
Log Berlin allocation		0.319**	
		(0.103)	
$\beta_{07} = \beta_{14}$	0.172	0.007	< 0.001
Socioeconomic controls	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes
Observations	516	516	516
Countries	20	20	20
Adjusted R^2	0.431	0.944	0.640

Notes: Column (1) weights observations by regional population. Column (2) uses log expenditure as the dependent variable and estimates the coefficient on the log Berlin allocation. Column (3) uses pre-COVID expenditure for the 2014–2020 programming period. Standard errors clustered at the country level are reported in parentheses. Wild-cluster bootstrap p-values based on 19,999 replications are reported in brackets and determine significance stars for the political-support coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The row $\beta_{07} = \beta_{14}$ reports wild-cluster bootstrap p-values for the Wald test of equality between β_{07} and β_{14}.

Table A2: Design-Stage Cabinet Support: Outcome Scale and Extreme Values

	Ratio in levels (1)	Winsorized 1st/99th (2)	Trimmed 1st/99th (3)
Cabinet support			
2007–2013	1.529***	1.232***	1.041***
	(0.436)	(0.330)	(0.358)
	[0.00015]	[0.00045]	[0.00395]
2014–2020	-0.368	-0.462	-0.538
	(0.449)	(0.327)	(0.297)
	[0.420]	[0.283]	[0.189]
$\beta_{07} = \beta_{14}$	0.00105	< 0.001	< 0.001
Socioeconomic controls	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes
Observations	516	516	506
Countries	20	20	20
Adjusted R^2	0.467	0.433	0.407

Notes: The dependent variable is expenditure relative to the Berlin allocation in levels. Column (2) winsorizes the outcome at the 1st and 99th percentiles, while column (3) drops observations outside those percentiles. Standard errors clustered at the country level are reported in parentheses. Wild-cluster bootstrap p-values based on 19,999 replications are reported in brackets and determine significance stars for the political-support coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The row $\beta_{07} = \beta_{14}$ reports wild-cluster bootstrap p-values for the Wald test of equality between β_{07} and β_{14}.

Table A3: Design-Stage Cabinet Support: NUTS2 Fixed Effects

	Baseline	Population weighted	Unrestricted Berlin coefficient	Pre-COVID expenditure
	(1)	(2)	(3)	(4)
Cabinet support				
2007–2013	0.015**	0.017**	0.008	0.015**
	(0.007)	(0.008)	(0.005)	(0.007)
	[0.046]	[0.031]	[0.160]	[0.043]
2014–2020	0.008	0.009	0.005	0.009
	(0.005)	(0.006)	(0.004)	(0.006)
	[0.106]	[0.100]	[0.184]	[0.131]
Log Berlin allocation			0.003	
			(0.117)	
			[0.980]	
$\beta_{07} = \beta_{14}$	0.382	0.378	0.543	0.397
Socioeconomic controls	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
NUTS2 fixed effects	Yes	Yes	Yes	Yes
Observations	516	516	516	516
Clusters	263	263	263	263
Adjusted R^2	0.501	0.644	0.963	0.717

Notes: All specifications include NUTS2 fixed effects in addition to the fixed effects in Equation 5.1. Column (2) weights observations by regional population. Column (3) uses log expenditure as the dependent variable and estimates the coefficient on the log Berlin allocation. Column (4) uses pre-COVID expenditure for the 2014–2020 programming period. Standard errors clustered at the NUTS2 level are reported in parentheses. Clustered p-values are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The row $\beta_{07} = \beta_{14}$ reports clustered p-values for the Wald test of equality between β_{07} and β_{14}.

Table A4: Design-Stage Cabinet Support: NUTS2 Fixed Effects and Extreme Values

	Ratio in levels (1)	Winsorized 1st/99th (2)	Trimmed 1st/99th (3)
Cabinet support			
2007–2013	1.621*	1.438**	1.294*
	(0.847)	(0.714)	(0.713)
	[0.057]	[0.045]	[0.071]
2014–2020	0.221	0.338	0.359
	(0.610)	(0.512)	(0.490)
	[0.718]	[0.509]	[0.464]
$\beta_{07} = \beta_{14}$	0.160	0.202	0.297
Socioeconomic controls	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes
NUTS2 fixed effects	Yes	Yes	Yes
Observations	516	516	506
Clusters	263	263	261

Notes: All specifications include NUTS2 fixed effects in addition to the fixed effects in Equation 5.1. The dependent variable is expenditure relative to the Berlin allocation in levels. Column (2) winsorizes the outcome at the 1st and 99th percentiles, while column (3) drops observations outside those percentiles. Standard errors clustered at the NUTS2 level are reported in parentheses. Clustered p-values are reported in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The row $\beta_{07} = \beta_{14}$ reports clustered p-values for the Wald test of equality between β_{07} and β_{14}.

Table A5: Design-Stage Cabinet Support: Leave-One-Country-Out Estimates

Specification	Fits	Min. Δ	Max. Δ	Rejections ($p < 0.05$)	Non-rejecting omissions
Log ratio	20	-0.0149	-0.0127	20	None
Ratio in levels	20	-2.1487	-1.5191	20	None
PPML	20	-0.0168	-0.0103	20	None

Notes: Each row summarizes 20 regressions, each excluding one Member State. $\Delta = \beta_{14} - \beta_{07}$. The fourth results column reports the number of country omissions for which the Wald test rejects at the 5 percent level. Inference uses conventional country-clustered standard errors.

Table A6: Design-Stage Electoral Margins and Alignment of the Leading Cabinet Party

	Absolute margin only (1)	Margin and alignment interaction (2)
Absolute top-cabinet-party margin		
2007–2013	-0.000	-0.014***
	(0.003)	(0.002)
	[0.994]	[0.0033]
2014–2020	-0.005	-0.002
	(0.003)	(0.003)
	[0.151]	[0.478]
Top-cabinet-party alignment		
2007–2013		-0.097
		(0.065)
		[0.166]
2014–2020		0.074
		(0.113)
		[0.539]
Absolute margin × alignment		
2007–2013		0.026***
		(0.004)
		[0.0024]
2014–2020		-0.005
		(0.006)
		[0.519]
Socioeconomic controls	Yes	Yes
Fixed effects	Yes	Yes
Observations	516	516
Countries	20	20

Notes: The dependent variable is the log of expenditure relative to the Berlin allocation. The absolute top-cabinet-party electoral margin is the absolute difference between the leading governing party's regional vote share and that of its strongest regional competitor. Top-cabinet-party alignment equals one when that party leads in the region. Column (2) interacts the absolute margin with alignment. Standard errors clustered at the country level are reported in parentheses. Wild-cluster bootstrap p-values based on 19,999 replications are reported in brackets and determine significance stars for the political-support coefficients. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A7: Cabinet Support: Robustness to Shorter Implementation Horizons

	$h < 1$	$h < 2$	$h < 3$	$h < 4$
	(1)	(2)	(3)	(4)
Current cabinet support				
2007–2013	-0.002*	-0.002*	-0.002	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
2014–2020	0.004**	0.005***	0.005***	0.005***
	(0.002)	(0.002)	(0.002)	(0.002)
Design-stage cabinet support				
2007–2013	0.005***	0.006***	0.007***	0.007***
	(0.002)	(0.002)	(0.002)	(0.002)
2014–2020	0.000	0.000	0.001	0.001
	(0.001)	(0.002)	(0.002)	(0.002)
Prior expenditure / Berlin allocation (asinh)	0.706***	0.655***	0.629***	0.614***
	(0.029)	(0.036)	(0.039)	(0.040)
$\beta_{07} = \beta_{14}$	0.002	0.002	0.003	0.003
$\delta_{07} = \delta_{14}$	0.020	0.017	0.018	0.022
Current economic controls	Yes	Yes	Yes	Yes
Pre-period socioeconomic controls	Yes	Yes	Yes	Yes
Observations	2,808	5,362	7,668	9,728
Clusters	261	261	261	261
Adjusted R^2	0.922	0.935	0.943	0.949

Notes: The dependent variable is the inverse hyperbolic sine of cumulative expenditure relative to the Berlin allocation. Standard errors clustered at the NUTS2 level are in parentheses. All specifications include NUTS2, programming-period, region-type-by-period, horizon, country-by-base-year, country-by-outcome-year, country-by-period, and programme-year fixed effects, together with the current economic and pre-period socioeconomic controls used in the preferred specification. Columns successively restrict the stacked sample to horizons below the indicated cutoff; they do not estimate separate effects at each horizon. The rows $\beta_{07} = \beta_{14}$ and $\delta_{07} = \delta_{14}$ report p-values from Wald tests of equality across programming periods.
Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A8: Cabinet Support: Robustness to Longer Implementation Horizons

	$h < 5$	$h < 6$	$h < 7$
	(1)	(2)	(3)
Current cabinet support			
2007–2013	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)
2014–2020	0.005**	0.005**	0.005**
	(0.002)	(0.002)	(0.002)
Design-stage cabinet support			
2007–2013	0.008***	0.009***	0.009***
	(0.003)	(0.003)	(0.003)
2014–2020	0.002	0.002	0.003
	(0.002)	(0.002)	(0.002)
Prior expenditure / Berlin allocation (asinh)	0.600***	0.586***	0.576***
	(0.041)	(0.042)	(0.041)
$\beta_{07} = \beta_{14}$	0.006	0.008	0.010
$\delta_{07} = \delta_{14}$	0.029	0.032	0.039
Current economic controls	Yes	Yes	Yes
Pre-period socioeconomic controls	Yes	Yes	Yes
Observations	11,286	12,333	12,922
Clusters	261	261	261
Adjusted R^2	0.952	0.954	0.954

Notes: The dependent variable is the inverse hyperbolic sine of cumulative expenditure relative to the Berlin allocation. Standard errors clustered at the NUTS2 level are in parentheses. All specifications include NUTS2, programming-period, region-type-by-period, horizon, country-by-base-year, country-by-outcome-year, country-by-period, and programme-year fixed effects, together with the current economic and pre-period socioeconomic controls used in the preferred specification. Columns successively restrict the stacked sample to horizons below the indicated cutoff; they do not estimate separate effects at each horizon. The rows $\beta_{07} = \beta_{14}$ and $\delta_{07} = \delta_{14}$ report p-values from Wald tests of equality across programming periods.
Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A9: Cabinet Support: Robustness to Outcome Transformation

	PPML	Log	Log(1 + ratio)	Levels	Winsorized levels
	(1)	(2)	(3)	(4)	(5)
Current cabinet support					
2007–2013	-0.000	-0.000	-0.000	0.095	0.112**
	(0.001)	(0.001)	(0.001)	(0.066)	(0.054)
2014–2020	0.005***	0.005**	0.005**	0.234	0.246**
	(0.002)	(0.002)	(0.002)	(0.149)	(0.106)
Design-stage cabinet support					
2007–2013	0.010***	0.009***	0.008***	0.294	0.294**
	(0.003)	(0.003)	(0.003)	(0.198)	(0.131)
2014–2020	0.002	0.003	0.003	-0.096	-0.075
	(0.002)	(0.002)	(0.002)	(0.129)	(0.099)
Prior expenditure / Berlin allocation (asinh)	0.465***	0.549***	0.544***	31.358***	25.597***
	(0.043)	(0.044)	(0.039)	(3.322)	(1.961)
$\beta_{07} = \beta_{14}$	0.006	0.027	0.016	0.382	0.223
$\delta_{07} = \delta_{14}$	0.002	0.055	0.050	0.051	0.019
Current economic controls	Yes	Yes	Yes	Yes	Yes
Pre-period socioeconomic controls	Yes	Yes	Yes	Yes	Yes
Observations	13,244	13,242	13,244	13,244	13,244
Clusters	261	261	261	261	261
Adjusted R^2	0.808	0.954	0.954	0.771	0.854

Notes: Standard errors clustered at the NUTS2 level are in parentheses. All specifications include NUTS2, programming-period, region-type-by-period, horizon, country-by-base-year, country-by-outcome-year, country-by-period, and programme-year fixed effects, together with the current economic and pre-period socioeconomic controls used in the preferred specification. Columns (1)–(3) use proportional transformations of cumulative expenditure relative to the Berlin allocation. Columns (4) and (5) use the ratio in levels; prior expenditure enters in inverse-hyperbolic-sine form in all columns. Column (5) winsorizes the dependent variable at the upper 1 percent of its distribution. The value reported as adjusted R^2 in column (1) is the pseudo-R^2. The rows $\beta_{07} = \beta_{14}$ and $\delta_{07} = \delta_{14}$ report p-values from Wald tests of equality across programming periods.

Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A10: Cabinet Support: Robustness to Weighting and Sample Definitions

	Population weighted	Period-specific prior expenditure	Pre-Covid outcomes	All years	Include design-stage government	All years and governments
	(1)	(2)	(3)	(4)	(5)	(6)
Current cabinet support						
2007–2013	-0.002**	-0.000	-0.001	-0.000	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
2014–2020	0.005**	0.005**	0.005*	0.005***	0.000	0.001
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.001)
Design-stage cabinet support						
2007–2013	0.011***	0.008***	0.009***	0.009***	0.009***	0.009***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
2014–2020	0.003	0.002	0.003	0.003	0.004	0.004
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Prior expenditure / Berlin allocation (asinh)	0.532***		0.527***	0.576***	0.425***	0.439***
	(0.046)		(0.037)	(0.040)	(0.039)	(0.039)
2007–2013		0.627***				
		(0.052)				
2014–2020		0.506***				
		(0.043)				
$\beta_{07} = \beta_{14}$	< 0.001	0.035	0.044	0.004	0.532	0.356
$\delta_{07} = \delta_{14}$	0.007	0.073	0.104	0.042	0.093	0.077
Current economic controls	Yes	Yes	Yes	Yes	Yes	Yes
Pre-period socioeconomic controls	Yes	Yes	Yes	Yes	Yes	Yes
Population weights	Yes	No	No	No	No	No
Observations	13,244	13,244	10,142	14,549	21,410	22,745
Clusters	261	261	261	261	263	263
Adjusted R^2	0.968	0.954	0.956	0.954	0.961	0.960

Notes: The dependent variable is the inverse hyperbolic sine of cumulative expenditure relative to the Berlin allocation. Standard errors clustered at the NUTS2 level are in parentheses. All specifications include NUTS2, programming-period, region-type-by-period, horizon, country-by-base-year, country-by-outcome-year, country-by-period, and programme-year fixed effects. Current economic controls include lagged GDP per capita, GDP growth, and unemployment; pre-period socioeconomic controls include GDP per capita, unemployment, and population growth over the preceding five years. Column (2) allows the coefficient on prior expenditure to differ by programming period. Column (3) restricts outcome years to before 2020. Column (4) uses all available years while continuing to exclude the government responsible for programme design. Column (5) includes the design-stage government while retaining the pre-2020 base-year restriction. Column (6) uses all available years and governments. The rows $\beta_{07} = \beta_{14}$ and $\delta_{07} = \delta_{14}$ report p-values from Wald tests of equality across programming periods.
Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A11: Cabinet Support: Robustness to Country-Period Fixed Effects

	Asinh	PPML	Log	Levels	Winsorized levels
	(1)	(2)	(3)	(4)	(5)
Current cabinet support					
2007–2013	-0.002*	-0.002	-0.002*	0.097	0.041
	(0.001)	(0.001)	(0.001)	(0.062)	(0.063)
2014–2020	0.003	0.003	0.003	0.111	0.150
	(0.002)	(0.002)	(0.002)	(0.117)	(0.092)
Design-stage cabinet support					
2007–2013	0.005***	0.004**	0.005***	-0.019	0.061
	(0.002)	(0.002)	(0.002)	(0.104)	(0.101)
2014–2020	-0.001	-0.003	-0.002	-0.319***	-0.263**
	(0.002)	(0.002)	(0.002)	(0.112)	(0.103)
Prior expenditure / Berlin allocation (asinh)	0.793***	0.737***	0.793***	45.536***	36.572***
	(0.026)	(0.036)	(0.026)	(4.441)	(1.737)
$\beta_{07} = \beta_{14}$	0.017	0.014	0.035	0.912	0.268
$\delta_{07} = \delta_{14}$	< 0.001	< 0.001	< 0.001	0.018	< 0.001
Current economic controls	Yes	Yes	Yes	Yes	Yes
Pre-period socioeconomic controls	Yes	Yes	Yes	Yes	Yes
Observations	13,244	13,244	13,242	13,244	13,244
Clusters	261	261	261	261	261
Adjusted R^2	0.937	0.778	0.940	0.700	0.820

Notes: Standard errors clustered at the NUTS2 level are in parentheses. Specifications replace the baseline NUTS2 fixed effects with country-period fixed effects while retaining programming-period, region-type-by-period, horizon, country-by-base-year, country-by-outcome-year, and programme-year fixed effects, together with the current economic and pre-period socioeconomic controls used in the preferred specification. Prior expenditure enters in inverse-hyperbolic-sine form in all five specifications. Column (5) winsorizes the dependent variable at the upper 1 percent of its distribution. The value reported as adjusted R^2 in column (2) is the pseudo-R^2. The rows $\beta_{07} = \beta_{14}$ and $\delta_{07} = \delta_{14}$ report p-values from Wald tests of equality across programming periods.
Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A12: Cabinet Support: Robustness to NUTS2-by-Period Fixed Effects

		Asinh	PPML	Log	Levels	Winsorized levels
		(1)	(2)	(3)	(4)	(5)
Current cabinet support						
2007–2013		-0.002***	-0.001**	-0.002***	0.046	0.053
		(0.001)	(0.001)	(0.001)	(0.037)	(0.034)
2014–2020		0.001	0.001*	0.000	-0.016	0.036
		(0.001)	(0.000)	(0.001)	(0.041)	(0.030)
Prior expenditure /	Berlin allocation (asinh)	-0.082***	-0.061***	-0.137***	-4.810***	-2.667**
		(0.017)	(0.015)	(0.029)	(1.125)	(1.093)
$\beta_{07} = \beta_{14}$		0.003	0.001	0.009	0.230	0.696
Current economic controls		Yes	Yes	Yes	Yes	Yes
Observations		13,244	13,244	13,242	13,244	13,244
Clusters		261	261	261	261	261
Adjusted R^2		0.982	0.842	0.980	0.839	0.898

Notes: Standard errors clustered at the NUTS2 level are in parentheses. Specifications replace the baseline NUTS2 fixed effects with NUTS2-by-programming-period fixed effects while retaining programming-period, region-type-by-period, horizon, country-by-base-year, country-by-outcome-year, country-by-period, and programme-year fixed effects. Design-stage political support and the pre-period socioeconomic controls are absorbed by the NUTS2-by-period fixed effects. Prior expenditure enters in inverse-hyperbolic-sine form in all five specifications. Column (5) winsorizes the dependent variable at the upper 1 percent of its distribution. The value reported as adjusted R^2 in column (2) is the pseudo-R^2. The row $\beta_{07} = \beta_{14}$ reports the p-value from a Wald test of equality across programming periods. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A13: Cabinet Support: Leave-One-Country-Out Robustness of Cross-Period Differences

Outcome	Political support	Min. difference	Max. difference	$p < 0.05$	Exceptions
Asinh	Current	0.005	0.008	17 / 20	ES, PL, PT
	Design-stage	-0.008	-0.003	6 / 20	—
PPML	Current	0.004	0.006	20 / 20	None
	Design-stage	-0.010	-0.005	19 / 20	IT
Levels	Current	0.081	0.197	0 / 20	—
	Design-stage	-0.628	-0.187	7 / 20	—

Notes: Each row summarizes 20 regressions, each excluding one Member State from the preferred implementation sample. Both current and design-stage cabinet support enter each specification. Differences are defined as the 2014–2020 coefficient minus the 2007–2013 coefficient for the same political-support variable. The column $p < 0.05$ reports the number of leave-one-country-out regressions in which a Wald test rejects equality of the two period-specific coefficients at the 5 percent level. "Exceptions" lists omitted countries where the test does not reject if a majority of the omissions reject; otherwise, a dash is shown. Standard errors and Wald tests in the underlying regressions are clustered at the NUTS2 level; no bootstrap is used.

B. Replication of the Berlin Method

This appendix describes the replication of the Berlin Method used to construct the regional allocation benchmark in Section 4.2. I replicate the allocation rules separately for the 2007–2013 and 2014–2020 programming periods, using the regional classification and the parameters applicable when each period was designed.

The analysis focuses on the ERDF and ESF, for which the Berlin Method has an explicit regional component. The Cohesion Fund is excluded because its allocation is determined at the Member-State rather than the NUTS2 level. The replication is carried out over the full set of regions eligible under each programming period before applying the sample restrictions used in the empirical analysis. This ensures that EU-wide averages and the relative shares entering the allocation formulas are calculated over the relevant universe of regions.

The euro amounts generated directly by the formulas are not used as the final Berlin allocation. Instead, the replication determines how the official funding total for a Member State and region type is distributed across its NUTS2 regions. This makes the benchmark consistent with the actual resources approved by the EU while preserving the regional distribution implied by the Berlin Method.

Let $\widetilde{B}_{rp}$ denote the allocation generated by the replicated formula for region r in programming period p, and let $g(r,p)$ denote its region type. For Member State m and region type g, I construct the regional formula share as

$$q_{rp} = \frac{\widetilde{B}_{rp}}{\sum_{j \in (m,g,p)} \widetilde{B}_{jp}}. \tag{B.1}$$

Let A_{mgp} denote the official approved ERDF and ESF funding total for Member State m and region type g. Some provisions of the regulations assign additional amounts directly to particular regions rather than through the general allocation formula. Let D_{rp} denote these region-specific additional provisions and $D_{mgp} = \sum_{j \in (m,g,p)} D_{jp}$. The Berlin allocation used in the paper is then

$$B_{rp} = q_{rp}\left(A_{mgp} - D_{mgp}\right) + D_{rp}. \tag{B.2}$$

Thus, the replicated Berlin Method determines the regional distribution of the formula-based component, while the final allocation reproduces the official approved funding total for each Member State and region type. National capping rules, minimum national allocations, and other provisions that operate on the total allocation are therefore already incorporated in A_{mgp} and do not need to be replicated a second time.

For 2007–2013, the official approved amounts are those reported in Commission Decision 2006/593/EC for the Regional Competitiveness and Employment objective and Commission Decision 2006/594/EC for the Convergence objective and the corresponding transitional support. For 2014–2020, I use the approved amounts by category of region reported in Commission Implementing Decision 2014/190/EU. I do not reproduce these tables here.

B.1. The 2007–2013 Programming Period

The 2007–2013 allocation follows Annex II of Council Regulation (EC) No 1083/2006. Regions are divided between the Convergence objective, the Regional Competitiveness and Employment objective, and the transitional arrangements applying to regions leaving the previous Objective 1 regime.

B.1.1. Convergence Regions. For each Convergence region r in Member State m, I construct the formula allocation as

$$\widetilde{B}_r = P_r \left(\overline{GDP}_{EU25} - GDP_r \right) \alpha_m + 700 \left[U_r - U_r^* \right]_+, \tag{B.3}$$

where $[x]_+ = \max\{x, 0\}$.

Here, P_r is regional population, GDP_r is regional GDP per capita in PPS, and $\overline{GDP}_{EU25}$ is average EU-25 GDP per capita in PPS. Consistent with the construction used in the main analysis, regional GDP per capita is averaged over 2001–2003, while population and unemployment are measured in 2005.

The parameter α_m depends on the relative prosperity of the Member State:

$$\alpha_m = \begin{cases} 0.0425, & \text{if GNI per capita is below 82\% of the EU average,} \\ 0.0336, & \text{if GNI per capita is between 82\% and 99\%,} \\ 0.0267, & \text{if GNI per capita is above 99\%.} \end{cases} \tag{B.4}$$

U_r is the observed number of unemployed persons in the region, while U_r^* is the number that would be unemployed if region r had the average unemployment rate of all EU Convergence regions. The EUR 700 premium therefore applies only to unemployment above the Convergence-region average.

B.1.2. Regional Competitiveness and Employment Regions. For Regional Competitiveness and Employment regions, the regulation distributes funding using five regional criteria. To put the criteria on a common scale, let

$$s_{rk} = \frac{X_{rk}}{\sum_{j \in \mathcal{R}^{RCE}} X_{jk}}, \tag{B.5}$$

where X_{rk} is region r's value of criterion k and $\mathcal{R}^{RCE}$ is the set of eligible Regional Competitiveness and Employment regions. The initial regional share is

$$\omega_r = 0.50 s_{r,Pop} + 0.20 s_{r,Unemp} + 0.15 s_{r,Jobs70} + 0.10 s_{r,LowEdu} + 0.05 s_{r,LowDens}. \tag{B.6}$$

The five criteria are:

- Pop_r: regional population;
- $Unemp_r$: the number of unemployed persons in NUTS3 regions within region r whose unemployment rate exceeds the average for the eligible group;
- $Jobs70_r$: the number of additional jobs required to reach an employment rate of 70%;
- $LowEdu_r$: the number of employed persons with a low educational level; and
- $LowDens_r$: the low-population-density component described below.

All variables entering these criteria are observed directly. In particular, the current replication does not impute NUTS3 unemployment or employment from NUTS2 relationships.

The regulation subsequently adjusts each regional share according to relative regional prosperity. I therefore define

$$\phi_r = \begin{cases} 1.05, & \text{if } GDP_r < \overline{GDP}_{RCE}, \\ 0.95, & \text{if } GDP_r > \overline{GDP}_{RCE}, \end{cases} \tag{B.7}$$

where $\overline{GDP}_{RCE}$ is average GDP per capita among eligible Regional Competitiveness and Employment regions. The replicated regional allocation is proportional to

$$\widetilde{B}_r = \phi_r \omega_r. \tag{B.8}$$

The regulation also imposes a minimum Member-State allocation relative to combined Objective 2 and Objective 3 funding in 2006. Because the final benchmark is rescaled to the official approved Member-State and region-type funding total in Equation (B.2), this national minimum is already reflected in the amount being distributed and does not require a separate adjustment to the regional shares.

B.1.3. Transitional Regions. The 2007–2013 framework contains two forms of transitional support. Both are based on a declining path from the region's 2006 per capita aid intensity toward the national aid intensity under the Regional Competitiveness and Employment objective.

For regions receiving phasing-out support, let $a_{r,2006}$ denote the region's 2006 per capita aid intensity and $a^{RCE}_{m,2013}$ the national average per capita aid intensity under the Regional Competitiveness and Employment objective in 2013. The annual aid intensity is

$$a^{PO}_{rt} = 0.80 a_{r,2006} + \frac{t - 2007}{6} \left(a^{RCE}_{m,2013} - 0.80 a_{r,2006} \right), \qquad t = 2007, \ldots, 2013. \tag{B.9}$$

For regions receiving phasing-in support, the corresponding path begins at 75% of the region's 2006 aid intensity and reaches the national Regional Competitiveness and Employment intensity by 2011:

$$a^{PI}_{rt} = 0.75 a_{r,2006} + \frac{t - 2007}{4} \left(a^{RCE}_{m,2011} - 0.75 a_{r,2006} \right), \qquad t = 2007, \ldots, 2011, \tag{B.10}$$

with the Regional Competitiveness and Employment rate applying thereafter.

For either transitional category, the corresponding annual allocation is

$$\widetilde{B}_{rt} = P_r a_{rt} + 600 \left[U_r - U^*_r \right]_+, \tag{B.11}$$

where the unemployment benchmark is the average unemployment rate of EU Convergence regions. I sum the annual amounts over the programming period before constructing the regional shares in Equation (B.1). Where Annex II establishes a specific transitional schedule for an individual case, that provision replaces the general path above.

B.2. The 2014–2020 Programming Period

For 2014–2020, Annex VII of Regulation (EU) No 1303/2013 divides regions into less developed, transition, and more developed regions. Relative to the previous period, the allocation rule changes both the aid intensities applied to the lowest-income regions and the criteria used to distribute funding among higher-income regions.

B.2.1. Less Developed Regions. For less developed regions, I construct

$$\widetilde{B}_r = P_r \left(\overline{GDP}_{EU27} - GDP_r \right) \alpha_m + 1300 \left[U_r - U_r^* \right]_+, \tag{B.12}$$

where regional GDP per capita is measured in PPS relative to the EU-27 average. In the replication, GDP per capita is averaged over 2007–2009, while population and unemployment are measured in 2011, consistent with the reference values used in the main analysis.

The national prosperity adjustment is

$$\alpha_m = \begin{cases} 0.0315, & \text{if GNI per capita is below 82\% of the EU-27 average,} \\ 0.0270, & \text{if GNI per capita is between 82\% and 99\%,} \\ 0.0165, & \text{if GNI per capita is above 99\%.} \end{cases} \tag{B.13}$$

U_r^* is the number of unemployed persons that region r would have if it had the average unemployment rate of all EU less-developed regions. The additional unemployment premium is EUR 1,300 per unemployed person above this benchmark.

B.2.2. Transition Regions. The 2014–2020 allocation for transition regions interpolates between a minimum and a maximum theoretical aid intensity.

Let a_m^{min} denote the average per capita aid intensity allocated to more-developed regions of Member State m before application of the regional safety net. If the Member State has no more-developed regions, the regulation assigns a minimum theoretical intensity of EUR 19.80 per person per year.

Let a_m^{max} denote 40% of the theoretical aid intensity that a less-developed region in Member State m would receive if its GDP per capita were exactly 75% of the EU-27 average.

For a transition region, define

$$g_r = \frac{GDP_r}{\overline{GDP}_{EU27}}.$$

The initial per capita aid intensity is obtained by linear interpolation between the maximum at 75% of the EU-27 average and the minimum at 90%:

$$a_r = a_m^{max} - \frac{g_r - 0.75}{0.90 - 0.75} \left(a_m^{max} - a_m^{min} \right). \tag{B.14}$$

The regional allocation is then proportional to

$$\widetilde{B}_r = P_r a_r + 1100 \left[U_r - U_r^* \right]_+, \tag{B.15}$$

where the unemployment benchmark is again the average unemployment rate of less-developed regions.

I also apply the regional minimum-allocation provisions in Annex VII. In particular, a transition region cannot receive less than the amount implied by treating it as a more-developed region. Regions that were below the 75% EU-25 threshold in the previous programming period but move above the corresponding 2014–2020 threshold are also subject to the minimum support specified by

the regulation.

B.2.3. More Developed Regions. For more-developed regions, the regulation first determines an aggregate theoretical amount using an aid intensity of EUR 19.80 per eligible resident per year and then distributes the amount according to seven criteria.

As above, let s_{rk} denote region r's share of the corresponding criterion among all eligible more-developed regions. The regional allocation score is

$$\begin{aligned}\widetilde{B}_r = {} & 0.25 s_{r,Pop} + 0.20 s_{r,Unemp} + 0.20 s_{r,EmpGap} + 0.125 s_{r,TertiaryGap} \\ & + 0.125 s_{r,EarlyLeave} + 0.075 s_{r,GDPGap} + 0.025 s_{r,LowDens}.\end{aligned} \tag{B.16}$$

The criteria are:

- Pop_r: total regional population;
- $Unemp_r$: the number of unemployed persons in regions whose unemployment rate exceeds the average for all more-developed regions;
- $EmpGap_r$: the number of additional employed persons required to reach an employment rate of 75% among persons aged 20–64;
- $TertiaryGap_r$: the number of persons aged 30–34 required to reach a tertiary-education attainment rate of 40%;
- $EarlyLeave_r$: the number of early leavers from education and training relative to the 10% target;
- $GDPGap_r$: the difference between observed regional GDP and the GDP the region would have if it had the GDP per capita of the most prosperous NUTS2 region; and
- $LowDens_r$: the population of NUTS3 regions with population density below 12.5 inhabitants per square kilometre.

Unlike the 2007–2013 Regional Competitiveness and Employment formula, the 2014–2020 regulation explicitly defines the low-density threshold and does not apply the subsequent +5%/−5% regional-prosperity adjustment.

B.3. Additional Provisions and Official Funding Totals

Both programming periods contain provisions that modify the allocations produced by the general formulas. Some operate at the Member-State level, including national caps, minimum allocations, and other adjustments to the total amount available. Because I apply the replicated regional shares to the official approved Member-State and region-type totals, these provisions are already incorporated in A_{mgp}.

Other provisions assign a specific amount or a specific minimum directly to an identifiable region. These provisions can affect the distribution within a Member State and region type and are therefore incorporated explicitly through D_{rp} in Equation (B.2). The approved amounts themselves are taken from the relevant Commission decisions rather than reconstructed from the formula.

The benchmark is intended to capture the allocation established at the beginning of each programming period. I therefore exclude subsequent technical adjustments that revised the original funding totals after the initial allocation, including the 2010 adjustment for 2007–2013 and the 2016 adjustment for 2014–2020.

B.4. Replication Assumptions and Data Treatment

The current replication uses observed values for the socioeconomic variables entering the Berlin Method. Earlier versions of the replication estimated some NUTS3 labour-market variables from NUTS2 data. This is no longer necessary: unemployment, employment, population, education, and the other variables entering the allocation criteria are observed directly at the geographical level required by the corresponding rule. When a criterion is defined using NUTS3 regions, I aggregate the observed NUTS3 information to the historical NUTS2 geography used by the allocation.

Two elements of the 2007–2013 regulation still require interpretation because the legal text does not fully specify how they should be operationalized.

First, the Regional Competitiveness and Employment formula assigns a weight to low population density but does not state a numerical density threshold. I therefore apply the same interpretation used in the original replication and select the threshold that produces the closest correspondence between the raw replicated allocation and the official Regional Competitiveness and Employment allocations before the rescaling in Equation (B.2).

Second, the transitional-support rules refer to the region's "individual 2006 per capita aid intensity" without providing all of the information required to reconstruct that starting value directly from the subsequently published regional data. I therefore recover the implied starting intensity by selecting the value that most closely reproduces the official transitional allocations before the final rescaling. These choices concern only ambiguous elements of the regulatory rule. Observed regional expenditure is never used to select the parameters of the Berlin replication.

The replication is also affected by revisions to historical socioeconomic data. The regional series available today can differ from the vintages available to the European Commission when the original allocations were calculated. I use the observed historical series corresponding as closely as possible to the reference periods specified by each allocation rule, but small discrepancies between the raw replicated amounts and the original Commission calculations can therefore remain. This is another reason for using the replicated method to determine regional shares and the official approved amounts to determine funding totals.

Finally, NUTS classifications changed between and after the two programming periods. I use the NUTS2 geography in place when each programming period was designed and reconstruct historical regions from lower-level units whenever possible. The principal cases affected in 2007–2013 include changes involving Brandenburg, Chemnitz, and Leipzig in Germany; Etelä-Suomi, Helsinki-Uusimaa, Itä-Suomi, and Pohjois-Suomi in Finland; Cheshire and Merseyside in the United Kingdom; and the historical NUTS2 regions of Ireland. For 2014–2020, the main case is Mayotte in France.

When an exact reconstruction is not possible but the relevant allocation can be assigned unambiguously to the corresponding historical region, I retain that assignment. Ireland is excluded from the empirical sample because its historical regional structure cannot be reconstructed with sufficient reliability for the Berlin benchmark. These geographical adjustments affect the mapping of the allocation to NUTS2 regions but do not alter the regulatory allocation rule itself.