OECD-EC High-Level Workshop Series: Place-Based Policies for the Future

The broadening of place-based policies – from reactive cohesion towards proactive support for all regions

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Place-based policies have undergone substantial changes recently. First, owing to academic research on the efficiency of spatial equilibrium and the geography of discontent, they have gained considerable attention and support among mainstream economists. Second, on the practical side, they have moved from classical cohesion policy solely targeted at less-developed regions towards a system of place-sensitive policies for all regions, including rich metropolitan areas. This broadening also includes a shift from a purely reactive towards a more proactive approach. Rather than repairing local economies after they have been hit by severe external shocks, place-based policies increasingly try to safeguard the transformation processes in successful regions. The aim is to maintain high income levels during the transformation, and to prevent an erosion of economic and social structures in the first place. But this approach could imply a diversion of net transfers away from the poorest and towards richer areas. The current paper provides a taxonomy of place-based policies and illustrates the recent trends with various examples. It discusses some implications how to successfully design place-based policies, and how to address the potential distributional conflict that comes with the new proactive approach.

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The series of six OECD-EC High-Level Workshops on "Place-Based Policies for the Future" consider place-based policies from the following angles: (1) how place-based policies have evolved; (2) the articulation of place-based policies against other policymaking frameworks; (3) how place-based policies can address current and future societal problems; (4) policy design, measurement and evaluation; (5) governance and coordination; and, (6) what place-based policies are required for the future.

The outputs of the workshops are a series of papers and a summary report that outlines future directions for place-based policies. This work will ultimately be relevant for policymakers at all levels of government who are interested in improving the design and implementation of place-based policies to contribute to equitable and sustainable economic futures.

The workshops support the work of the OECD Regional Development Policy Committee and its mandate to promote the design and implementation of policies that are adapted to the relevant territorial scales or geographies. The seminars also support the work of the Directorate-General for Regional and Urban Policy (DG REGIO) of the European Commission. The financial contributions and support from DG REGIO are gratefully acknowledged.

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Executive summary

- Place-based policies (PBPs) have long been considered peripheral in most OECD countries. However, significant changes have recently occurred for two primary reasons.
- Firstly, recent theoretical and empirical research has challenged the prevailing spatial equilibrium analysis paradigm that views PBPs as inefficient disruptions to market-based resource allocation. This research has established a strong case for spatial dispersion of economic activity, leading to increased acceptance of PBPs among mainstream economists.
- Secondly, and of great importance to practitioners and policymakers, many countries have faced political backlash due to growing spatial economic disparities. Economically disadvantaged regions, which have suffered severe local shocks, have shown strong support for populist movements. By striving to foster spatial cohesion, PBPs have become an attempt to mitigate these political trends and safeguard liberal democracies as a whole.
- It is notoriously difficult to even define PBPs. In theoretical economic frameworks they are often modelled as pure income transfers to residents of economically lagging regions, but this is not how PBPs work in practice. Instead, there is much heterogeneity in economic circumstances across regions, and as much heterogeneity in specific policy designs.
- PBPs consist of a highly diverse multitude of programs, which try to affect the spatial resource allocation in many ways. Some policies have a direct approach: they offer subsidies or tax credits to firms or prioritized infrastructure investments in clearly designated target regions. Other PBPs are much broader and more indirect in scope.
- Focusing on priorities like education, research and development, transport, culture, and so forth, they often have a very different official focus than supporting certain regions. And yet they can have profound effects on economic geography, as some regions benefit much more from those programs than others. And yet other policies do not follow the vertical design of PBPs, where a federal government decides the rules of the game, but rather have a horizontal setup which tries to equalize fiscal capacities across jurisdictions.
- The aim of this paper is twofold. First, we try to offer an (at least partial) categorization of different types of PBPs. Second, we then describe some recent trends which have recently occurred within this policy area.
- PBPs were traditionally mostly about classic cohesion, focusing on economically lagging regions, but recently there has been a substantial broadening. They have developed towards an open set of place-sensitive policies for all types of regions, including the richest and most thriving metropolitan areas within the area. Quantitatively, the main focus is currently still on the less developed ones, but even this feature could somewhat change in the future.
- Looking ahead, the importance of PBPs is likely to increase. The challenges of economic transformation are imminent and affect all industrialized countries and regions. The scope of these challenges is vast: production must shift towards climate-friendly and digitized practices while reducing reliance on inputs from autocratic regimes. These transformations must occur amidst

rapidly aging workforces, shortages of skilled labor, stressed global value chains, and increasing social inequalities.

- The impacts of these problems will be particularly felt at the local level. Thriving superstar cities are poised to benefit from these changes as they often host cutting-edge technologies and new business models. However, less urbanized regions face more complex circumstances. Despite currently hosting successful industrial clusters with excellent performance, some of them may undergo stressful transformations with uncertain outcomes in the foreseeable future.
- In response to these challenges, PBPs have recently undergone significant transformations and expanded their scope. Traditionally, PBPs primarily focused on classical cohesion policies for lagging regions ("objective 1") or reactive support for richer industrialized regions that experienced severe local shocks, such as the Ruhr area since the 1970s ("objective 2").
- In such cases, regional policies aimed to repair local structures and prevent further social erosion. However, the recent approach suggests that PBPs should adopt a more proactive stance. Policymakers should not wait for local labor markets to deteriorate before taking action. Instead, the idea is to anticipate regions that are likely to face acute problems in their ongoing and forthcoming transformation processes, problems that they cannot address on their own. Proactive policies would provide support to these regions with the ultimate goal of preventing a downward spiral from occurring in the first place.
- But such a shift in focus, from reactive to proactive, raises some questions: proactive PBPs focus on regions, which are still highly successful today, exhibit high income levels, and tend to be net payers in the grand schemes of regional redistribution. When more resources go to those places, this could mean that classic cohesion policy for lagging regions has to be downsized.
- In this paper we first illustrate some examples for proactive PBPs from Germany, more specifically the regional support packages accompanying the lignite phase-out, and the transformation networks for the automotive industry.
- We then analyze if there is an inevitable distributional conflict between less developed and more developed regions when it comes to the design of PBPs, and we try to offer a possible solution how PBPs could generate a “win-win” potential for everyone.

1 Introduction

Place-based policies (PBPs) have long been considered peripheral in most OECD countries. However, significant changes have recently occurred for two primary reasons. Firstly, recent theoretical and empirical research has challenged the prevailing spatial equilibrium analysis paradigm that views PBPs as inefficient disruptions to market-based resource allocation (Rosen 1979; Roback 1982; Glaeser and Gottlieb 2008). This research has established a strong case for spatial dispersion of economic activity (Fajgelbaum and Gaubert, 2020; Henkel et al. 2021), leading to increased acceptance of PBPs among mainstream economists. Secondly, and of great importance to practitioners and policymakers, many countries have faced political backlash due to growing spatial economic disparities. Economically disadvantaged regions, which have suffered severe local shocks, have shown strong support for populist movements (Rodriguez-Posé 2017). By striving to foster spatial cohesion, PBPs have become an attempt to mitigate these political trends and safeguard liberal democracies as a whole (Collier 2019).

It is notoriously difficult to even define PBPs. In theoretical economic frameworks they are often modelled as pure income transfers to residents of economically lagging regions, but this is not how PBPs work in practice. Instead, there is much heterogeneity in economic circumstances across regions, and as much heterogeneity in specific policy designs. PBPs consist of a highly diverse multitude of programs, which try to affect the spatial resource allocation in many ways. Some policies have a direct approach: they offer subsidies or tax credits to firms or prioritized infrastructure investments in clearly designated target regions. This is, for example, the typical approach of US enterprise zones or EU cohesion policies. Other PBPs are much broader and more indirect in scope. Focusing on priorities like education, research and development, transport, culture, and so forth, they often have a very different official focus than supporting certain regions. And yet they can have profound effects on economic geography, as some regions benefit much from those programs than others. And yet other policies do not follow the vertical design of PBPs, where a federal government decides the rules of the game, but rather have a horizontal setup which tries to equalize fiscal capacities across jurisdictions.

The aim of this paper is twofold. First, we try to offer an (at least partial) categorization of different types of PBPs. Second, we then describe some recent trends which have recently occurred within this policy area. PBPs were traditionally mostly about classic cohesion, focusing on economically lagging regions, but recently there has been a substantial broadening. They have developed towards an open set of place-sensitive policies for all types of regions, including the richest and most thriving metropolitan areas within the area. Quantitatively, the main focus is currently still on the less developed ones, but even this feature could somewhat change in the future.

Looking ahead, the importance of PBPs is likely to increase. The challenges of economic transformation are imminent and affect all industrialized countries and regions. The scope of these challenges is vast: production must shift towards climate-friendly and digitized practices while reducing reliance on inputs from autocratic regimes. These transformations must occur amidst rapidly aging workforces, shortages of skilled labour, stressed global value chains, and increasing social inequalities. The impacts of these problems will be particularly felt at the local level. Thriving superstar cities are poised to benefit from these changes as they often host cutting-edge technologies and new business models (Autor et al. 2020; Dauth et al. 2022; Firgo et al. 2018; Andrews et al. 2016). However, less urbanized regions face more complex circumstances. Despite currently hosting successful industrial clusters with excellent global market performance, some of them may undergo stressful transformations with uncertain outcomes in the foreseeable future.

In response to these challenges, PBPs have recently undergone significant transformations and expanded their scope. Traditionally, PBPs primarily focused on classical cohesion policies for lagging regions ("objective 1") or reactive support for richer industrialized regions that experienced severe local shocks, such as the Ruhr area since the 1970s ("objective 2"). In such cases, regional policies aimed to repair local structures and prevent further social erosion. However, the recent approach suggests that PBPs should adopt a more proactive stance. Policymakers should not wait for local labor markets to deteriorate before taking action. Instead, the idea is to anticipate regions that are likely to face acute problems in their ongoing and forthcoming transformation processes, problems that they cannot address on their own. Proactive policies would provide support to these regions with the ultimate goal of preventing a downward spiral from occurring in the first place.

But such a shift in focus, from reactive to proactive, raises some questions: proactive PBPs focus on regions, which are still highly successful today, exhibit high income levels, and tend to be net payers in the grand schemes of regional redistribution. When more resources go to those places, this could mean that classic cohesion policy for lagging regions has to be downsized. We analyze in this paper if there is an inevitable distributional conflict between less developed and more developed regions when it comes to the design of PBPs, and we try to offer a possible solution how PBPs could generate a “win-win” potential for everyone.

The remainder of this paper is structures as follows. In Section 2, we first categorize PBPs and describe some recent trends. In Section 3, we review the academic literature on how the leading paradigm about PBPs has changed over time. In Section 4, we turn to proactive PBPs and introduce some recent examples from Germany, and derive some general policy lessons from them. In Section 5, we try to provide a preliminary overall assessment of proactive PBPs, address potential distributional conflicts with classic cohesion policies, and offer a possible solution. Finally, Section 6 concludes.

2 Taxonomy of place-based policies

It is difficult to find a clear and unambiguous definition for the term *place-based policies* (PBPs). McCann (2023) traces the origin of the term all the way back to Winnick (1966) and provides a comprehensive review how it has been received within the economics profession over time.

But what are PBPs to begin with? Probably the most common interpretation is the notion of cohesion policy, where economically backward areas within an integrated territory receive subsidies in order to promote their growth and convergence. This traditional understanding is still the main principle guiding cohesion policies of the European Union (EU), which are discussed in more detail in Section 2.1, as well as of US enterprise zones and many other examples of national PBP schemes. It is also the concept studied in most of the theoretical economics literature.

However, the scope for PBPs has become much wider recently, both in the conduct of EU policies but also in other practical cases. PBPs have moved to an open set of place-sensitive policies with different programs accessible for different types of regions. For instance, municipalities in Germany have access to an extensive range of funding programs, totaling up to 943 different opportunities.[1] These programs are financed by various entities, including the European Union, the Federal government, and the State level. They encompass a wide array of priorities such as research and development, education, housing, urban planning, arts, environment, agriculture, and more. Some programs have the explicit objective to strengthen regional and local institutions and governance, in order to meet with policy objectives of higher-levels of government. The eligibility and focus of these programs vary across regions as well. Some are specifically targeted at economically disadvantaged areas, while others cater to rural regions, cities, or are open to all local governments. In this broad sense, PBPs are not solely dedicated to promoting cohesion but rather provide a system of place-sensitive support in diverse policy areas.

However, it is important to note that even though these programs may not explicitly aim to promote cohesion, they can still have indirect spatial implications that impact spatial economic disparities. This occurs because certain regions may have a higher concentration of potential recipients for these subsidies, possess better administrative capacities to apply for funding, and exhibit other factors that make them more attractive to the various programs. Consequently, these regions may receive a greater share of funds compared to other regions, thereby potentially exacerbating spatial economic disparities.

To illustrate this breadthening of PBPs, we start this section by reviewing how EU cohesion policies have changed over time. We then provide a more general overview and categorize some features and designs of recent PBPs, and discuss the gradual shift from a purely reactive to a more proactive approach of PBPs that is currently taking place.

[1] See https://dip21.bundestag.de/dip21/btd/19/235/1923514.pdf (page 27). If funding programs for firms and other agencies are included, the number increases from 943 to more than 2,600.

2.1. EU cohesion policy

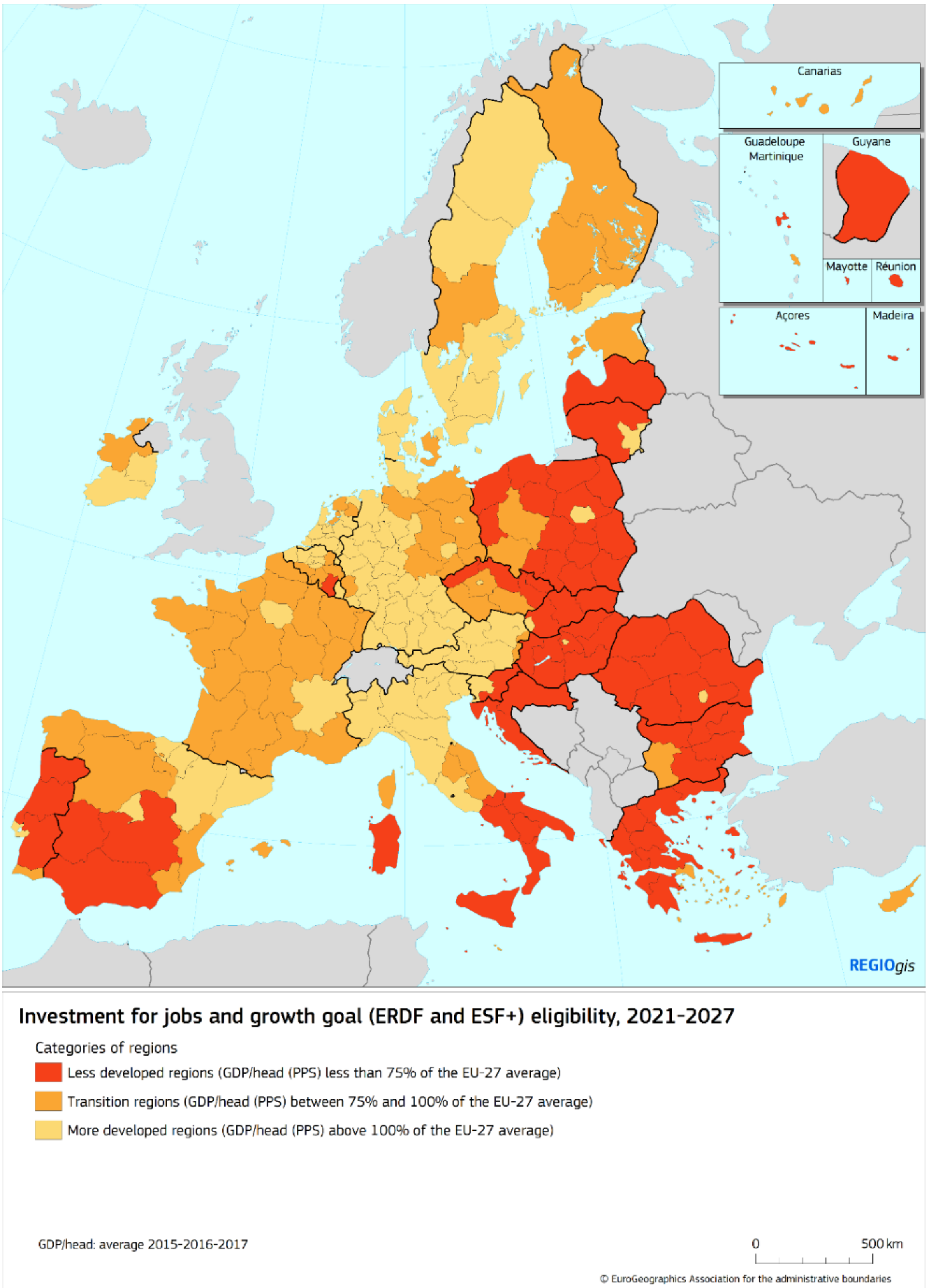
In the budget period 2021-2027, around 392 billion Euro are allocated to cohesion policy. This makes it the second most important regular item within the common EU budget, outsized only by agricultural policy. It is delivered through specific funds[2] to EU member states and aims to achieve five specific goals: 1) a more competitive and smarter Europe, 2) a greener, low carbon transitioning towards a net zero carbon economy, 3) a more connected Europe by enhancing mobility, 4) a more social and inclusive Europe, and 5) Europe closer to citizens by fostering the sustainable and integrated development of all types of territories.[3] Traditional PBPs in the US (enterprise zones) and other OECD member states are broadly similar.

The conduct of EU cohesion policy distinguishes three types of regions illustrated in Figure 1: less developed regions (LDRs), transition regions, and more developed regions (MDRs).

[2] Quantitatively the most important funds are the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Convergence Fund (CF) and the Just Transition Fund (JTF).

[3] See https://ec.europa.eu/regional_policy/policy/how/priorities_en . Notice that the last goal even explicitly states that cohesion policy intends to support development in *all* regions.

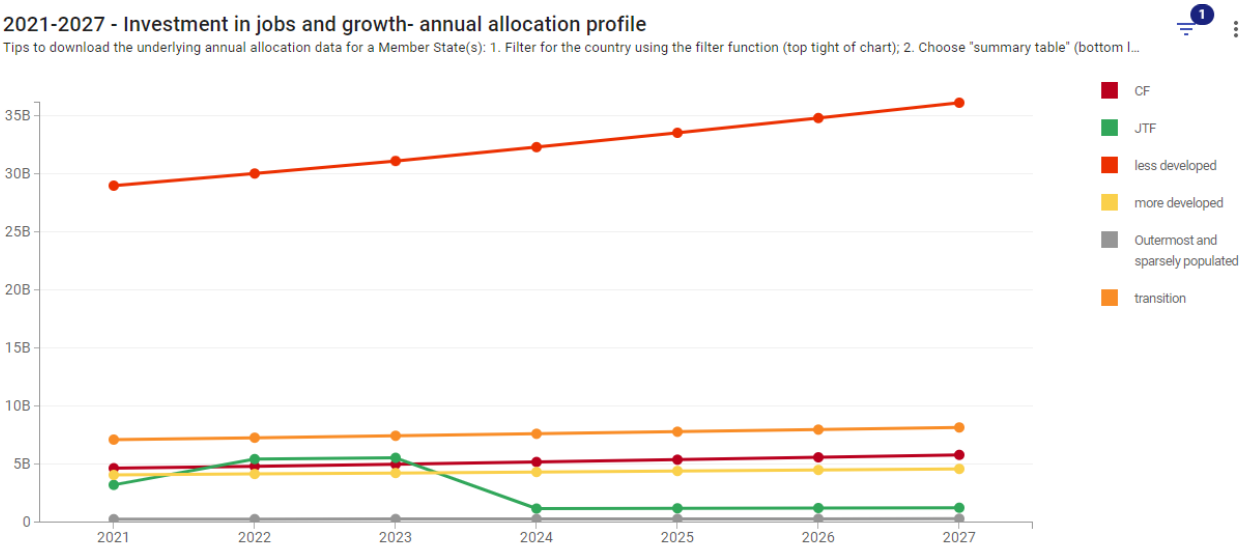
Figure 1: Recipients of EU cohesion policy



Note: PPS is regional purchasing power adjustment of GDP per capita

Different specific regulations apply for each group, such as different co-financing requirements from local governments for public infrastructure investments or different maximum subsidy rates for private investment projects. The main priority is still support for LDRs, as can be seen from Figure 2. By and large, current cohesion polices thus still maintain the traditional notion of “objective 1” funding, which has been the label for classic EU cohesion policy in previous budget periods. It defined strict eligibility criteria for recipient areas (mostly GDP per-capita below 75% of the EU average), and then used a restricted set of tools to foster convergence in those LDRs. Predominant instruments were subsidies for private investment, prioritized public investments in infrastructure and education, and relocations of public sector agencies in order to boost demand.

Figure 2: Budget allocation within EU cohesion policy



Note: CF = cohesion fund (distributed to low-income EU member states), JTF = Just transition fund (mostly for coal areas)

In addition to the traditional funding known as "objective 1," there has historically been a provision called "objective 2" funding. This particular type of cohesion policy aimed at regions other than the poorest ones, specifically targeting old industrial districts that were experiencing rapid change and decline. However, in previous budget periods, there were numerous regions that did not qualify for either "objective 1" or "objective 2" funding, which meant they did not receive any EU cohesion funds at all.

This situation has changed in recent EU budget periods since 2014. The current approach of EU cohesion policy now encompasses all regions within the EU, including the wealthiest and most developed ones. This ensures that the five overarching policy goals (refer to footnote 2) are shared and implemented uniformly across the EU. This shift signifies how EU policy has evolved from focusing solely on traditional cohesion for a limited group of less developed regions (LDRs) to a collection of place-sensitive programs that encompass all regions.

This trend becomes even more evident when considering national programs for PBPs. In practice, member states combine EU funds with their own resources to finance cohesion policy initiatives. For instance, in Germany, EU policy is administered by the Länder (NUTS 1 regions). They negotiate with Brussels and utilize funds from the European Regional Development Fund (ERDF) and the European Social Fund (ESF), which are the primary funding mechanisms, to support projects aligned with specific EU regulations and goals. Additionally, the Länder receive additional cohesion funds from the German federal government, such as through the Joint Task for the Improvement of Regional Economic Structures (GRW) or other programs, and allocate their own resources for place-based policies within their jurisdictions.

Consequently, comprehensive investment plans are formulated, consisting of a list of projects that are often selected through competitive tenders and funded from various sources. This approach introduces different conditions for different programs and recipients, enabling governments to tailor higher subsidy rates for investments in poorer regions. However, in general, these programs are open to all regions, including the wealthier, more developed regions (MDRs), and adhere to the same development goals across all geographic areas.

2.2. Place-sensitive policies for different types of recipients

The tremendous diversity among regions, firms, and populations necessitates tailored approaches to address their distinct challenges. In their comprehensive study, Barba Navaretti and Markovic (2021) present a valuable classification of three broad types of Place-Based Policies (PBPs), each targeting different types of recipients: [4]

1. Policies to foster agglomeration: This category aligns with the traditional concept of cohesion policy ("objective 1") mentioned earlier. It primarily focuses on economically disadvantaged Less Developed Regions (LDRs) determined by relative economic indicators. The aim is to stimulate investment and job creation in these designated areas, fostering convergence and growth.
2. Policies to avoid deglomeration: The second category follows the logic of "objective 2" and is predominantly designed for regions that have undergone rapid and disruptive industrial changes. These regions often consist of industrial districts that were once prosperous but experienced a swift decline as key manufacturing industries succumbed to globalization (Autor et al., 2013 2020; Dauth et al., 2014, 2017; Acemoglu and Restrepo 2018, 2020). Despite their remaining manufacturing base and income levels above eligibility thresholds, they do not qualify for LDR funding. Policies in this category aim to prevent the erosion of social structures, supporting regions in overcoming their legacies and the challenges of transitioning their local economies.

It is worth noting that historically, these policies have tended to be reactive, implemented once the industrial changes have occurred or, at best, in parallel with them. For instance, various subsidy packages were introduced in the Ruhr area of Germany to slow down the decline of coal mining and steel manufacturing while promoting employment growth in other manufacturing sectors or service industries such as insurance in Dortmund or logistics in Duisburg. But historically, “objective 2” funding did not take a proactive stance.

Finally, the third type of PBP according to Barba Navaretti and Markovic (2021) can be classified as follows:

3. Policies to preserve agglomeration: This set of policies addresses regions that do not fall into the less developed ("objective 1") or rapidly declining ("objective 2") categories. Barba Navaretti and Markovic (2021) highlight large metropolitan areas facing unique challenges such as housing scarcity, intra-city traffic congestion, urban inequality, and social inclusiveness. These metropolitan areas often boast high average per capita income levels and do not typically receive net transfers from other regions. However, policies specifically tailored to address place-specific problems in large cities can still be considered as PBPs.

However, the third category is not limited to metropolitan areas. It introduces a novel proactive approach to PBPs. Imagine a region that is neither metropolitan, nor economically lagging, nor experiencing significant past disruptions. Instead, envision a somewhat remote manufacturing area that currently thrives in terms of productivity, income, and labor market performance but anticipates significant transformations in the foreseeable future. These transformations could be driven by factors such as digitalization, decarbonization efforts (e.g., phasing out lignite and coal or the banning of combustion engines in

[4] In the original paper, Barba Navaretti and Markovic (2021) include a fourth program type, namely “policies to connect center and periphery”. This point is omitted here, since this paper has no focus on transport policies.

automotive production), or other related causes. Regardless of the driving force, the local industrial composition is likely to undergo substantial changes.

Metropolitan Development Regions (MDRs) of this nature, such as Heilbronn in Baden-Württemberg or Rheinisches Revier in NRW, have never been the typical candidates for regional subsidies. In fact, they have often been contributors to regional transfer schemes in the past. However, there is growing concern that they may become the "objective 2" or even "objective 1" regions of tomorrow.

To address this concern, the new policy approach is to implement proactive PBPs that support these regions' transformations, aiming to prevent a downward spiral before it occurs. Sections 4 and 5 of the study will delve into greater detail regarding this shift, exploring their associated advantages and disadvantages, with a particular focus on recent examples from Germany.

2.3. Horizontal versus vertical redistribution across regions

To prepare this discussion, it is useful to first position PBPs also in a different categorization, namely into the grand cross-regional schemes of

1. Vertical fiscal redistribution
2. Horizontal fiscal redistribution

Vertical policies involve higher-order government layers, such as federal or EU governments, providing specific funding for predetermined projects in designated recipient areas. Examples include EU cohesion funds, US enterprise zones, UK or French employment zones, and the German GRW (*Gemeinschaftsaufgabe regionale Wirtschaftsstruktur*), among others. The defining feature of vertical policies is that funds are allocated for projects aligned with the predefined goals set by the higher-order government layers.

In contrast, fiscal equalization schemes exemplify horizontal policies, which redistribute tax revenue from regions with higher fiscal capacity to those with lower capacity. This enables recipient regions to afford greater public spending than they would otherwise. Fiscal equalization schemes can be substantial in size, as shown by Henkel et al. (2021) in the case of Germany, where such schemes, including *Länderfinanzausgleich* and lower-level local schemes within the Länder, redistribute an amount equivalent to approximately ten percent of aggregate tax revenue across regions, totaling around 90 billion Euros annually. This amount surpasses the combined EU cohesion funds and dwarfs the funding allocated by the federal government for vertical regional policies (e.g., the GRW, with an annual budget of less than 2 billion Euros). At the EU level, no horizontal scheme currently exists, but within individual member states, horizontal regional redistribution tends to outpace vertical redistribution by a considerable margin.

A crucial distinction between horizontal and vertical redistribution lies in how the funds are targeted. In fiscal equalization schemes, net transfers typically manifest as additional general revenue for the recipient regions, which they can allocate according to their own discretion without specific targeting for particular types of public spending. On the other hand, vertical policies provide targeted grants to recipients, requiring them to use the funds in accordance with the rules and regulations set by the higher-order government layer.

Another important difference is the immediacy of regional redistribution. Horizontal equalization involves wealthier Metropolitan Development Regions (MDRs) directly transferring parts of their tax revenue to other regions. In contrast, the effects of vertical redistribution are less direct. MDRs with strong economic foundations contribute disproportionately to the tax revenue of the federal government layer but do not receive associated federal spending through classic cohesion policies.

Comparing vertical and horizontal redistribution approaches reveals pros and cons for each. Horizontal equalization promotes solidarity and contributes to equitable living conditions within a federation while allowing recipient regions autonomy in deciding spending priorities based on local preferences. However, this autonomy can become a disadvantage if recipient regions allocate net receipts to fund ineffective policies. Assessing the quality of spending objectively is challenging due to variations in local voter preferences. This full spending autonomy may strain the solidarity of net contributors and lead to resentment toward horizontal fiscal equalization schemes.

The vertical approach aims to address this challenge through targeted funding, aiming to enhance the quality of public spending. However, heterogeneity among local recipients may cause complications. Disagreements can arise regarding overarching policy goals, with recipients feeling patronized by distant bureaucrats from entities such as Brussels, who may be perceived as disconnected from the “real issues” on the ground. Dissatisfaction with federal regulations for fund management, burdensome bureaucratic guidelines, and other factors can also contribute to dissatisfaction, especially when there is low fungibility of transfers across different programs and low flexibility in spending rules (see Solé-Ollé 2023). In general, the vertical approach may distort spending decisions, moving them away from local preferences toward federally imposed preferences, potentially creating inefficiencies.

In conclusion, both vertical and horizontal approaches to regional redistribution have advantages and drawbacks. Horizontal equalization promotes solidarity and grants spending autonomy to recipient regions, while the vertical approach attempts to improve the quality of spending through targeted funds. However, each approach faces challenges related to local preferences, bureaucracy, and potential inefficiencies.

2.4. From reactive to proactive PBPs: Distributional implications

This longstanding controversy in local public finance, which can be traced back to Oates (1972), continues to generate discussion. The recent shift in the design of place-based policies (PBPs) from reactive cohesion to a proactive approach introduces new dimensions to this ongoing debate.

As mentioned earlier, EU cohesion policy traditionally operated as a vertical policy. Through "objective 1" funding, the EU imposed spending priorities on recipient Least Developed Regions (LDRs), which often resulted in tensions and inefficiencies. However, as outlined in Section 2.1, the design of cohesion policy has recently undergone changes, now encompassing all regions within the EU. While Most Developed Regions (MDRs) continue to be net contributors, they are also recipients under this scheme.

One might wonder why such an approach was chosen instead of focusing regional support solely on the neediest LDRs. One possible explanation lies in Niskanen's (1975) theory of bureaucracy. The new approach tends to increase the overall budget volume, thereby enhancing the perceived importance of this policy area. This aspect appeals to politicians responsible for cohesion funds and sends a signal that the EU takes care of all regions.

However, there is also a more favorable interpretation of this shift. By targeting all regions, cohesion policy ensures that MDRs also adhere to the imposed EU rules and priorities. Consequently, the same spending goals and principles are now applicable everywhere, thereby developing a common language and effectively creating a “double citizenship” (Jacques Delors) for the principles of cohesion policy: all are part of it, and everyone is eligible.

A similar rationale applies to the recent trend of making PBPs more proactive, specifically by focusing on the transformation challenges faced by current MDRs like Heilbronn or Rheinisches Revier, which fear losing their privileged status: rather than leaving them alone with their local transformation challenges, they receive structural aid via specifically designed programs and thereby subscribe to the overarching principles and goals of cohesion policy.

However, this shift from merely reactive towards proactive PBPs may give rise to potential distributional conflicts between LDRs and MDRs. If current MDRs receive increased proactive support to tackle local challenges, there may be fewer financial resources available for traditional cohesion policy, which predominantly benefits LDRs. In response to their own challenges, MDRs may seek to reduce net transfers to LDRs. They could pursue this by downsizing cohesion policy overall to reduce contributions. Alternatively, they could leave overall budget volumes unchanged, but claim a larger share of expenditure for proactive PBPs, which tend to benefit MDRs more. This latter approach would not touch the overall importance or the general principles of cohesion policy, but could still lead to substantial internal budget reallocations.

Section 5 will delve into these issues further and discuss potential solutions to address this conflict. In advance, it is crucial to design PBPs, especially the proactive branches, in a manner that promotes growth. This approach is essential to maintain or ideally enhance the redistributive capacities of MDRs throughout the transformation process. If net-paying regions experience job and income losses, it will have negative externalities for current net-receiving regions. Conversely, if growth is stimulated in MDRs, it indirectly benefits LDRs as well. Therefore, PBPs should strive for "win-win potentials" by fostering growth, both in general and particularly in the new proactive branches.

3 Paradigm shift on the conduct of place-based policies

The previous Section has categorized different types of regional redistribution schemes, provided a taxonomy of various place-based policies (PBPs), and described recent trends how PBPs have broadened their focus. Before further illustrating this trend towards more proactive PBPs, we take a step back in this Section and discuss how (and why) the overall perception of PBPs has changed in the academic literature, and why the perceived importance of this policy area tends to be much higher today than, say, fifteen years ago.[5]

3.1. The “old” paradigm of spatial economics

The traditional paradigm in spatial economics, famously captured by Edward Glaeser and Joshua Gottlieb (2008), staunchly advocates for "Subsidize people, not places!" This viewpoint opposes place-based approaches to income redistribution, arguing that if policymakers aim to address inequality, they should directly redistribute income among individuals regardless of their location. Interfering with the spatial resource allocation dictated by market equilibrium, according to this perspective, is deemed inefficient and economically unjustifiable based on the canonical Rosen-Roback model, a spatial extension of the neoclassical general equilibrium framework.

The underlying rationale is as follows: all workers and firms have the freedom to choose their location within a country, and any policies that distort these choices typically result in deadweight losses. Consequently, regional policies that divert economic activity from productive core cities to unproductive remote areas lead to national productivity and output losses, ultimately diminishing the overall societal welfare. Therefore, redistributive policies aimed at equality should be spatially neutral, refraining from influencing the spatial distribution of resources or altering the choices of workers and firms. Instead, the focus should lie on laissez-faire principles in economic geography during the production stage, with income redistribution occurring solely among individuals after production. [6]

In fact, according to this paradigm, regional policies should primarily concentrate on eliminating zoning and housing supply restrictions that hinder the growth of large cities. Removing such barriers allows for the full utilization of agglomeration advantages in these thriving urban centers. Some scholars even advocate for deliberate schemes promoting relocations towards major cities to fully exploit their untapped potential. For instance, research by Chetty et al. (2016) suggests that households, especially children, who relocate to prosperous cities ("moving to opportunity") significantly benefit in their later careers. Therefore, the main objective should be reducing obstacles to individual mobility, accelerating the flow of people to areas

[5] This Section draws on and extends Suedekum (2021), and complements the comprehensive historical review by McCann (2023).

[6] In this spirit, Albouy (2009) argues that the ordinary system of income taxation, which appears to be spatially neutral at first sight, may actually bias locational choices against cities because nominal income is taxed, not adjusted for higher costs of living in denser metropolitan areas.

offering the best job opportunities and quality of life. However, policies that impede individuals from leaving disadvantaged regions should be avoided.

It is worth noting that this paradigm, in its pure form, has not predominantly shaped actual policymaking in Europe or the United States. As outlined in Section 2, regional policies targeting spatial economic cohesion do exist and hold considerable significance.[7] Nevertheless, until relatively recently, these policies had a mixed, if not negative, reputation among mainstream economists. Due to the lack of a solid allocative foundation in spatial equilibrium theory, they were often viewed as suboptimal forms of income redistribution with various inefficient side effects or as outcomes of political economy games where impoverished regions successfully lobbied for transfers. Empirically, extensive evaluation literature indicates that many specific policies have not effectively achieved their intended objectives (e.g., Becker et al., 2010).

3.2. Paradigm change after Brexit and Trump

A decade after Edward Glaeser's notable quote, he published another paper (see Austin et al. 2018) titled "*Jobs for the heartland: place-based policies in 21st-century America*," which showcased a significantly different perspective on the subject. So, what has transpired in the intervening years?

In fact, two notable developments have taken place. The first shift emerged from new theoretical research that gradually departed from the underlying Rosen-Roback framework. Contemporary models, exemplified by Fajgelbaum and Gaubert 2020, Fajgelbaum et al. 2019, and Henkel et al. 2021, consider a multitude of externalities that individuals tend to overlook when making decisions about their geographic location. Consequently, the conventional wisdom of the first welfare theorem and spatial equilibrium aligning with socially optimal allocation no longer holds.

These recent studies argue that a laissez-faire approach can lead to an inefficient spatial structure where large cities, from a societal perspective, become "excessively large." [8] The rationale behind this view is that negative congestion effects at the margin outweigh the positive agglomeration forces. Therefore, there exists an economic case for implementing cohesion policies aimed at dispersing economic activity, beyond the mere political justification of redistribution or political economy. According to this growing body of literature, society as a whole would experience welfare gains if economic activity were more evenly distributed across space.

The second reason for the improved reception of place-based policies is grounded in practical considerations. Recent political events, such as the 2016 Brexit vote, the election of Donald Trump as President of the United States, and electoral outcomes in several other countries, have underscored the political consequences of widening regional inequalities, better known as the “geography of discontent” (McCann 2020). These events have demonstrated that economically lagging regions (LDRs) or transition regions affected by significant local shocks tend to be fertile ground for populist movements (Rodríguez-Pose 2017). In response, regional policies that aim to foster spatial economic cohesion have become a means of safeguarding against such political upheavals. In fact, some commentators have gone so far as to suggest that place-based policies have become an indispensable tool for preserving liberal democracies as a whole (Collier 2019).

[7] See Newmark and Simpson (2015) or Barba Navaretti and Markovic (2021) for an overview.

[8] Another string in the theoretical literature integrates explicit mobility costs into dynamic spatial equilibrium models, see Ahlfeldt et al. (2020). This gives rise to heterogeneous welfare effects of local shocks across individuals, since utility equalization (potentially augmented with idiosyncratic locational tastes) does not hold at any given point in time as in standard Rosen-Roback-type frameworks.

3.3. Place-based policies: Bad economics, but good politics?

The evolving theoretical research and the political landscape have contributed to a more favorable reception of PBPs, marking a departure from the earlier skepticism among mainstream economists. This shift recognizes the potential inefficiencies of spatial equilibrium and acknowledges the need to address widening regional disparities in order to promote overall societal welfare and mitigate political backlash.

To contextualize these political developments within the economic literature, it is important to acknowledge that the assumption of perfect individual mobility, a fundamental pillar of the Rosen-Roback model, has always been highly unrealistic. In reality, regional migration is a selective process that tends to favor younger and more educated workers. In fact, research conducted by Bosquet and Overman (2019) reveals that approximately 40 percent of the UK population essentially never moves from their birthplace location, often the same as their parents' birthplace, throughout their entire careers.

Regrettably, these immobile workers also tend to be the most vulnerable to local labor demand shocks resulting from globalization, automation, digitalization, or other drivers of industrial change. Unlike younger and skilled workers who can respond to adverse shocks by migrating to thriving cities, this immobile population typically lacks the option to "exit." However, they can still exercise their influence through "voice" at the ballot box.

Viewed in this light, PBPs could exemplify the well-known principle highlighted by Acemoglu and Robinson (2014) that sometimes "good economics" can lead to disastrous policies. Adhering to the traditional Rosen-Roback paradigm where place-based policies are considered inefficient "bad economics," recent events suggest that they are still necessary. The absence of such policies could be even worse politically as it may undermine the societal foundations of the market economy. Under the new theoretical paradigm, PBPs may even serve as welfare-enhancing elements of "good economics." Economic theory and political reality appear to be better aligned at the moment. However, subtle discrepancies still persist.

One notable discrepancy lies in the ambiguity surrounding the term "PBP" and what it encompasses. The theoretical debate has predominantly focused on pure income transfers, where no transfers are considered optimal in the Rosen-Roback model. Fajgelbaum and Gaubert (2020) make an allocative case for transfers directly paid by urban residents to inhabitants of lagging regions. The rationale is that lump-sum transfers are expected to carry no distortions, unlike other tools that may introduce additional inefficiencies during implementation.

In the real world, however, practical PBPs almost always take forms other than direct monetary transfers.[9] Instead, they employ diverse approaches such as firm subsidies or targeted infrastructure investments to shift resources across regions. This discrepancy between practical PBPs and the ideal instrument studied in much of the theoretical economics literature can be attributed to several factors.

One reason is that pure transfer payments are perceived as passive in nature and may carry a stigma for the recipients. Many potential recipients in lagging regions or transition areas do not want to depend solely on government assistance but strive for new opportunities. As leading economist Daron Acemoglu aptly puts it, "it is good jobs, not redistribution, that provide people with purpose and meaning in life." [10] Another reason for the deviation between practical PBPs and monetary income transfers to households in lagging regions is the potential for triggering a tragedy of the commons problem. By solely raising relocation incentives based on personal transfer receipts, it could exacerbate the issue. In contrast, discretionary

[9] There are a few exceptions, such as the industrial areas in Northern England, which remained support in the Thatcher era mostly via direct income transfers.

[10] This assumption is hard to square with the simplest form of neoclassical microeconomic theory, because the standard "homo oeconomicus" is not reluctant to accept pure income transfers. However, new theoretical approaches conceptualize the behavioral foundations of this reluctance related to the concept of "human dignity".

PBPs might be interpreted as a coordinated effort to shift the spatial equilibrium towards a more dispersed configuration. Regardless of the reasons, implemented PBPs typically seek to "activate" economic activity in recipient areas rather than provide passive income support. However, this complex reality is not adequately reflected in theoretical models concerning the allocative foundations of PBPs.

Given the multitude of available concrete policies, an obvious question arises: which specific PBPs are most appropriate for achieving their desired goals while minimizing resource waste and secondary distortions? This practical discussion has been central to the work of Barba Navaretti and Markovic (2021), Suedekum (2021), Newmark and Simpson (2015), and numerous other papers in the literature that aim to empirically evaluate the performance of different specific PBPs. However, the focus of the remaining paper diverges from studying the performance of specific tools in classic cohesion policies. Instead, it shifts attention to the more recent proactive efforts aimed at assisting current most developed regions (MDRs) in their upcoming transformation challenges.

4 Proactive place-based policies: some examples from Germany

In this Section, we will review some national PBPs in Germany. They illustrate the broadening and the gradual shifts which have recently taken place, in particular the higher importance of proactive approaches. In Section 4.1. we first discuss the recent reforms in the general framework for national PBPs in Germany. Afterwards, we will turn to two specific examples for discretionary proactive regional policies, namely those that accompanied the phasing-out of lignite (Section 4.2.) and the regional transformation networks for automotive clusters (Section 4.3.). A joint discussion, which compares the examples and tries to deduct some general lessons, is placed in Section 5.

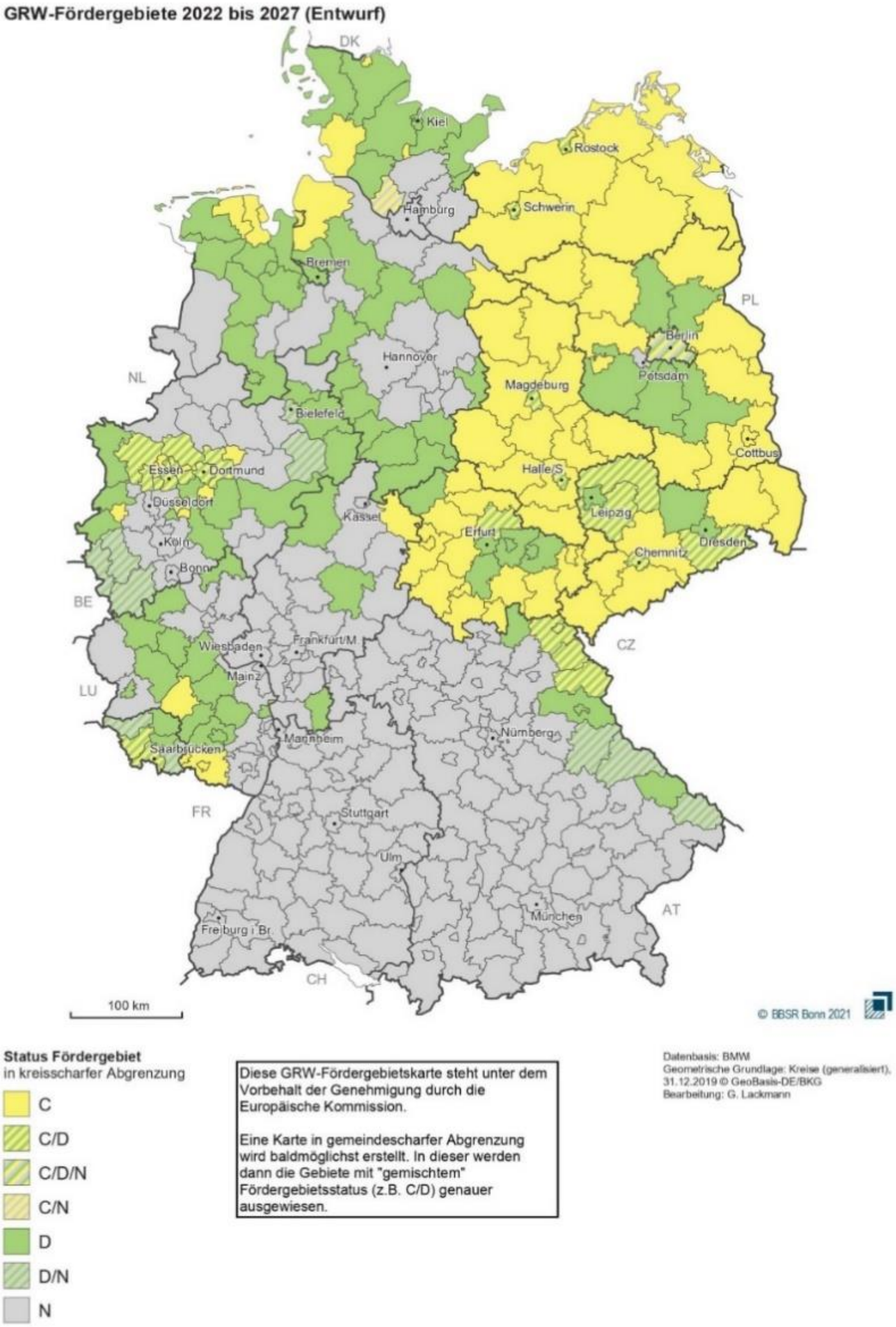
4.1. Reform of GRW and GFS

The GRW (Joint task regional economic structure, *Gemeinschaftsaufgabe regionale Wirtschaftsstruktur*) stands as Germany's primary instrument for regional policy.[11] Since the early 1970s, GRW funding has been instrumental in supporting over 150,000 corporate investment projects and improving municipal infrastructure in less developed regions. It operates as a vertical policy, with the Federal German government and the Länder distributing funds to local governments or private enterprises in designated recipient areas. The overarching goal is to (co-)finance investment projects, with rules and priorities established at the higher level. Thus, the GRW exemplifies a classical case of national cohesion policy. It employs strict eligibility criteria and applies varying subsidy rates and co-financing requirements based on the regions' priority levels within the GRW scheme.

Following the German reunification in 1990, the GRW became a major tool for fostering the development and convergence of regions in East Germany, as a significant portion of funds was directed towards these regions. While the eligibility pattern has undergone some changes over time, it has not witnessed a dramatic shift. In the current budget period, regions classified as having the highest priority for subsidies (C-Fördergebiete) are still primarily located in the east, although this is no longer an exclusive scenario (refer to Figure 3). The most generous funding allocations continue to be directed towards East Germany, while Bavaria and Baden-Württemberg receive (almost) no GRW funding. Consequently, in comparison to EU cohesion funds, GRW is narrower in scope since Germany's Most Developed Regions (MDRs) do not receive support through this scheme.

[11] https://www.bmwk.de/Redaktion/EN/Pressemitteilungen/2022/12/20221213-federation-and-lander-adopt-comprehensive-reform-of-regional-economic-assistance.html

Figure 3: GRW funding areas



Although the regional distribution of subsidies has not experienced significant changes, the GRW underwent its most substantial reform in over 50 years in 2022. This reform primarily focused on the following aspects:

- Expanded Target System: The GRW now pursues four main aims: mitigating disadvantages affecting commercial activity, creating and safeguarding jobs, fostering growth and prosperity, and accelerating the transition to a climate-neutral and sustainable economy.
- Regional Value Chains and Economic Cycles: The previous requirement that funding be directed towards companies selling products or services outside the region, at least 50 km away from their base, has been removed. Instead, the GRW will prioritize regional value chains and economic cycles, thereby strengthening the foundation for autonomous regional development.
- Climate-Friendly Investments and Research-Intensive Companies: The preconditions for funding climate-friendly investments and research-intensive companies have been relaxed. In terms of commerce-related infrastructure funding, greater emphasis will be placed on climate-friendly and sustainable measures. For instance, the GRW will allocate more comprehensive funding to the continued use or repurposing of former industrial and commercial sites rather than the development of new sites. The same principle applies to in-house generation of renewable energy and other activities that contribute to a sustainable economy.

Additionally, a new funding area is introduced for measures related to "soft location factors" that significantly contribute to attracting skilled workers and making places more appealing for commercial activity.

In summary, the GRW reform exemplifies the broadening of the scope of PBPs mentioned before. Its focus is no longer solely on job creation or income convergence. This shift is likely influenced by changing demographic trends, where unemployment is no longer considered the primary economic problem due to the shrinking and aging labor force, leading to potential shortages, particularly in skilled workers. Consequently, climate goals now play a prominent role within the GRW, explicitly integrated into the rules for supporting private and public investments. For the latter, the focus extends beyond "brick and steel" infrastructure to encompass facets such as culture and childcare. The underlying rationale is once again related to demographic factors: recipient regions must attract skilled immigrants from other regions or outside of Germany, and research has shown that these "soft factors" significantly influence the location decisions of the desired target groups.

While the GRW serves as Germany's official tool for regional policy, there are numerous other programs that exclusively or disproportionately focus on less developed regions. These programs cover a wide range of areas and priorities, from agriculture to social policy, and are administered by different federal ministries. However, the lack of coordination among these programs often leads to information frictions and inefficiencies. To address this issue, the federal government implemented the common regional funding system (Gesamtdeutsches Fördersystem, GFS) in 2019, aiming to improve coordination among the programs.[12] One key innovation of the GFS reform is the ability to shift unused funds from one program to another, under specific conditions. This increased flexibility ensures a more consistent and predictable funding flow for recipients.

When combined, the GRW and GFS reforms represent a similar shift as discussed for EU cohesion policy in Section 2.1. Despite these changes, the reforms have not yet incorporated proactive elements into the schemes. The regional eligibility criteria have remained relatively unchanged over time, rendering it impossible to channel funding to MDRs since they continue to be non-eligible areas. As a result, proactive PBPs under this umbrella are not yet feasible. Nonetheless, this may change in the future, with GFS potentially becoming the primary tool for PBPs, given its broader scope. However, at present, proactive

[12] https://www.bmwk.de/Redaktion/DE/Artikel/Wirtschaft/gesamtdeutsches-foerdersystem.html

PBPs in Germany are organized in a more discretionary manner outside the framework established by GRW and GFS. Some examples will be introduced next.

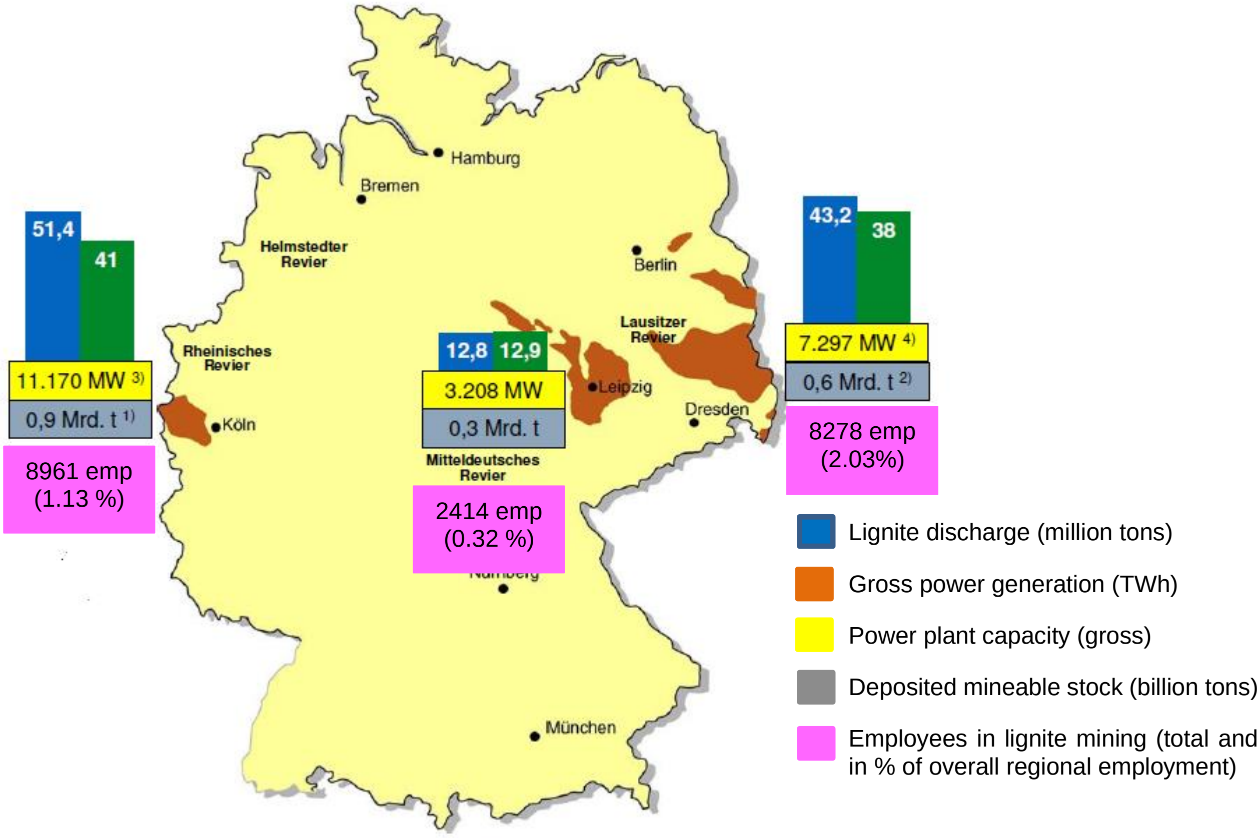
4.2. The German lignite phase-out

In June 2018, the German federal government took a significant step by establishing a one-off advisory body known as the "coal commission." This commission was tasked with developing comprehensive plans to phase out lignite production in Germany while simultaneously alleviating the burden of adjustment faced by various stakeholders. The recommendations put forth by the commission ultimately paved the way for the ratification of two crucial laws in July 2020.

The first of these laws, referred to as the "*Kohleausstiegsgesetz*" (Coal Exit Act), held immense significance as it presented a detailed schedule for the gradual phase-out of coal power plants. Thereby, it also introduced compensation payments aimed at supporting the operating firms during this transition phase. While this initial law played a crucial role, our primary focus lies on the second law, the "*Strukturstärkungsgesetz*" (Structural Strengthening Act). Aligned with the spirit of the just transition funding (JTF) at the EU level, this legislation provided the legal foundation for the implementation of extensive structural aid programs specifically designed to support the regions in Germany where lignite mining is concentrated.

These regions, depicted in Figure 4, encompass three significant lignite mining territories: Rheinisches Revier, located near Cologne at the western border with Belgium; Mitteldeutsches Revier, situated in proximity to Leipzig; and Lausitz, positioned on the eastern border with Poland and the Czech Republic. Notably, due to their location in former Eastern Germany, the latter two territories have historically been eligible for the highest priority of GRW-funding (as displayed in map 3). However, it is important to highlight that this same privilege has not extended to the Rheinisches Revier in the west. It has not been a primary recipient of major regional transfers in the past, and it is still classified as a Most Developed Region (MDR) as can be seen in Figure 1.

Figure 4: Lignite-mining areas in Germany



Sources: Debriv 2021; Bundesverband Braunkohle; RWI (2018); https://braunkohle.de/wp-content/uploads/2019/01/debriv_izb_20171005_web.pdf

The municipalities in the three lignite areas are set to receive substantial financial aid amounting to a staggering €40 billion until 2038.[13] This substantial investment is specifically earmarked to facilitate structural changes required within these regions. It is worth considering that despite the German lignite industry currently employing only approximately 20,000 workers directly, the financial allocation translates mathematically to a substantial subsidy of €2 million per job or €100,000 per job per year over the entire program's time horizon.[14]

Astoundingly, this level of support surpasses the average annual earnings of the workers, which currently remain below €40,000. Moreover, it is significantly higher than what the government typically spends on structural adjustment programs or other regional policy schemes. Furthermore, even in relative terms, the coal mining industry accounts for a relatively small portion of local employment, constituting a mere 2% of the workforce in the Lausitz area and an even smaller fraction in the other two regions.[15]

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[13] Some additional minor sums were released for the former lignite area around Helmstedt, and for the Ruhr area formerly specialized in hard coal mining.

[14] Including indirectly induced jobs in related industries, RWI Essen (2018) estimates that the number of affected jobs increases to around 32,000. See here: https://www.rwi-essen.de/media/content/pages/publikationen/ rwi-projektberichte/rwi-pb_strukturdaten_braunkohleregionen_endbericht.pdf

[15] Including indirect employment leads to an increase of the local employment share in Lausitz to around 3.5 per cent, with even lower shares in the other areas.

To ensure the effective execution of these support programs, a substantial portion of the overall financial allocation, totaling €26 billion, is expected to be directly provided by the federal government. These funds will be channeled as top-ups for research and promotional programs, research infrastructure projects, and the establishment of new federal institutions in the respective regions. Additionally, the remaining €14 billion will be disbursed as targeted funds to the involved states, namely Nordrhein-Westfalen, Brandenburg, Sachsen, and Sachsen-Anhalt, thereby facilitating further investments aligned with their respective priorities.

Importantly, all these funds will be supplementary to the existing regional transfer schemes and will not be subject to any co-financing requirements from the municipalities involved. In addition to the substantial financial aid allocated for regional transformation, there are additional provisions in place to address the potential consequences of the coal exit. This includes compensation payments to firms and households affected by higher electricity prices that may arise from the transition. Moreover, additional direct compensations will be extended to workers adversely impacted by the shift, facilitated through the German federal employment agency. These measures encompass various support mechanisms such as funding for vocational training programs aimed at facilitating job switches and early retirement schemes specifically targeting workers aged 58 and above who face potential job losses as a result of the coal exit over the program's defined time horizon.

In conclusion, it becomes evident that the three coal mining areas will receive an abundance of support extending far beyond the initial allocation of €40 billion. This substantial commitment reflects the government's resolute dedication to ensuring a just and sustainable transition away from lignite production, encompassing comprehensive measures to address the challenges faced by all stakeholders involved.[16] In the context of this study, it is important to notice that the support packages for the lignite mining areas can be interpreted as a proactive PBP: the structural support is initiated *before* the actual implementation of the lignite phase-out. Hence, and in contrast to previous episodes of deep industrial change, the policy approach this time is to prevent a local downward spiral and the erosion of social structures in the first place, rather than trying to repair damages ex post after they have occurred. This proactive approach involves channeling substantial funds to areas, specifically Rhenisches Revier, that would not be eligible for regular cohesion funds.

4.3. Transformation networks for the automotive industry

The second recent example for a proactive PBP in Germany is even broader in scope and involves the automotive industry. In order to achieve climate goals, the transport sector must play a significant role in reducing emissions. This necessitates a swift transition away from combustion engines and towards more environmentally friendly alternatives, particularly electric vehicles. The German federal government estimates that the proportion of newly registered vehicles equipped with battery technology must increase from the current 10-15 percent to at least 70 percent by 2030 if the objectives outlined in the Paris climate agreement are to be met. In line with these ambitions, the EU Commission has recently strengthened its plans to completely phase out combustion engines by 2035.

Undoubtedly, this climate policy presents a substantial challenge for the automotive industry. Unlike lignite mining, which is being phased out entirely, the automotive industry is required to transform its business model while still remaining active. However, this transformation process entails the gradual disappearance

[16] One important caveat applies with respect to the overall financial volume, however. The passed law states that *up to* €40 billion will be spent on investment and structural transformation support in the three coalmining areas until 2038. Given the legal structure, this commitment can be considered quite strong but certainly not irrevocable. Future governments could, in principle, pass a new law to reduce the amount or even abolish the funds altogether. As of today, however, there are no markers for cut-backs in the intended volume as a result of the reduced fiscal capacities.

of the current dominant technology and the associated jobs within a similar timeframe as the phase-out of coal-fired power generation.

The critical question facing the automotive industry, which currently employs around 2 million workers in Germany and serves as a vital cornerstone of the country's manufacturing sector, revolves around striking a balance between the jobs that will be displaced and the new jobs that will be created during this transformation. The issue at hand is that battery technology, compared to combustion engines, is technologically less complex and requires less labor input per unit during production. Moreover, Germany's position on world markets relative to competing countries (especially China) is currently weaker for EVs than for cars with conventional combustion engine.

Consequently, initial impact analyses have projected significant job losses in the automotive industry, ranging from 400,000 to 500,000 jobs.[17] However, these pessimistic projections have since been somewhat revised, and current estimates suggest that the overall number of jobs within the broader German mobility sector might even remain roughly stable.[18] Nonetheless, there is likely to be a substantial churning and a potential mismatch between the jobs lost in certain occupations, such as manual production of components for combustion engines, and the growing labor demand for jobs with entirely different skill sets, such as IT and customer services. Even if the demand for these new jobs matches or even exceeds the job losses in other segments of the industry, it remains unclear whether the same workers who were displaced can seamlessly transition into these new roles.

This mismatch problem is expected to affect large and small firms differently, subsequently yielding diverse implications for regional labor markets. It is widely anticipated that the three major German automakers and their respective headquarter locations (VW in Wolfsburg, Daimler in Stuttgart, and BMW in Munich) will not suffer the most severe consequences from this transition. The same holds true for tier-1 suppliers like Bosch in Stuttgart and ZF in Friedrichshafen, as they have spent years preparing for this transformation and have already established numerous future-proof jobs aligned with the green and digital mobility era.

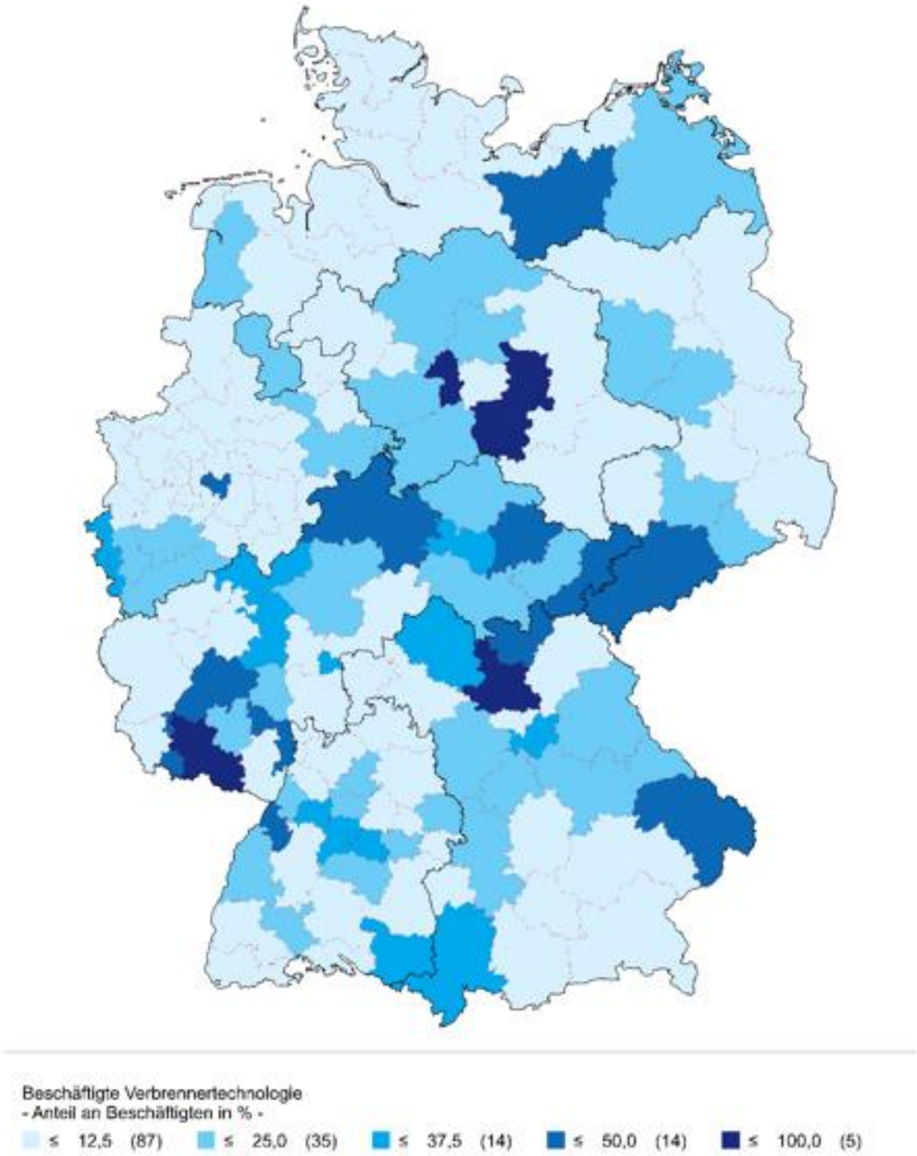
However, the most delicate challenges are anticipated for small and medium-sized suppliers that currently specialize in components for combustion engines. Many of these suppliers have developed their business models over the course of several years, if not decades, through gradual process innovations and provide specific car parts within highly specialized value chains. When the use of combustion engines is phased out, many of these value chains will come under strain, particularly since automakers are currently insourcing most parts for electric engines. From a regional perspective, this situation will pose significant problems in local labor markets where there is a strong concentration of "combustion engine suppliers."

The map depicted in Figure 5 illustrates the spatial dimension of this problem. Based on survey data from IG Metall, the trade union representing the automotive industry, the map displays the employment share in each region that is directly or indirectly dependent on the combustion engine. In total, Germany has around 70 regional clusters where automobile production is concentrated. According to IG Metall's estimations, approximately 20-30 clusters have a critical "combustion share," rendering them vulnerable to upcoming labor market challenges (highlighted as dark blue areas in Figure 5).

[17] See here: https://www.plattform-zukunft-mobilitaet.de/2download/1-zwischenbericht-zur-strategischen-personalplanung-und-entwicklung-im-mobilitaetssektor/

[18] See here: https://www.iao.fraunhofer.de/de/presse-und-medien/aktuelles/automobiler-wandel-perspektiven-fuer-die-beschaeftigung-2030.html

Figure 5: Automobile regions in Germany



Source: IG Metall

In response to these challenges, policymakers have recently introduced various initiatives to support the transition in the automotive industry. Most of these programs are unrelated to PBPs and consist of instruments such as buyer incentives for electric vehicles, infrastructure investments for battery charging stations, research and development grants, and other measures, amounting to a total subsidy volume of around €8 billion for the industry.

In 2021, a specific focus on the regional aspect was addressed through the "*Zukunftsfonds Automobilindustrie*" (Future Fund for the Automotive Industry), worth €1 billion until 2025. Approximately one-third of the funds are allocated to establishing agencies for regional transformation in particularly vulnerable clusters. As of September 2022, around 30 local clusters have successfully applied for this support scheme. The key idea behind this initiative is to set up and finance platforms where local stakeholders can develop "transformation strategies" for small and medium-sized enterprises (SMEs) and their workers. These strategies encompass retraining programs aimed at facilitating job transitions within the local job market.

Notably, the recipients of this support scheme include some familiar recipients of PBPs, such as Saarland, Pfalz, and Eisenach in Thuringia. However, a significant portion of the funds is allocated to high-income areas in Bavaria or Baden-Württemberg, such as Heilbronn, which are currently not eligible for GRW funding or transition funding under EU cohesion policy. In other words, this support scheme for automotive regions is distinctive as a proactive PBP, as the primary criterion for receiving subsidies is not based on current local hardships but rather on the attempt to avoid future challenges.

5 Proactive place-based policies: a preliminary assessment

In the previous section, we have discussed two specific cases of proactive place-based policies (PBPs) in Germany, referring to the lignite mining and the automotive industry. In the current section, we shall compare and examine those cases from a broader perspective, and derive some general economic implications or lessons from them.

5.1. Comparing and interpreting the proactive policy schemes

The first striking difference between the two specific PBPs concerns their quantitative magnitudes. The coalmining industry has received substantial support, with €40 billion allocated for just 20,000 jobs. In contrast, the automotive industry, which employs around 2 million workers, has received only €1 billion via the Zukunftsfonds and around €9 billion when combining all support schemes including the non-PBPs. Other industries undergoing transformation, such as chemicals and machinery, have not received any special PBPs. This raises the question of why this pattern of support exists.

One possible explanation comes from the literature on the geography of discontent (McCann 2020). One of the three coalmining areas, the Lausitz, was once a thriving industrial and coalmining hub that performed relatively well compared to other regions in East Germany. However, after the reunification in 1990, the Lausitz experienced rapid economic decline compared to other eastern regions. Globalization and the emergence of new competitors from Eastern Europe and Asia further impacted the region. In terms of regional employment growth, the Lausitz ranked last among all 411 German districts from 1991 to 2019. By the time the coal compromise was decided in 2019, coal mining jobs accounted for less than 3% of all jobs in the Lausitz, as most of the industry had already disappeared from the area. However, due to the cultural and self-perception significance of lignite mining, there was a strong concern that further job losses would have devastating effects on the region's social and political climate, potentially triggering a downward spiral. Given that some parts of the region already had an Alternative for Germany (AfD) vote share exceeding 40%, generous funding for the coal compromise aimed to prevent further decline in the Lausitz. The two other areas were probably not bound to experience a similar fate, but still had to benefit proportionally from the same support schemes as Lausitz.

While this political explanation is surely relevant, it alone does not provide a convincing economic foundation for the design of this proactive PBP. Another way to analyze this case is to recognize that the circumstances surrounding the lignite phase-out created a quite unique environment to test an approach which would not be available in other contexts.

Effectively, many other industries apart from lignite mining and automobiles are currently undergoing a deep economic transformation and experience rapid changes in local structures to become climate-neutral and more digitized. Consequently, numerous regions may face disruptive labor market shocks. In such a rapidly changing environment, it is not feasible for governments to design comprehensive packages for each and every industry and region. This would overburden the organizational and financial capacities of the public sector. Moreover, governments typically cannot selectively support certain regions while leaving others without special assistance due to political realities and the mandate of equal and fair treatment.

However, the phase-out of lignite presented a unique and exceptional situation that bypassed the usual selection problems. The government, rather than relying on market forces, deliberately made the decision to swiftly and completely abandon an entire industry. Consequently, there was widespread agreement that this unilateral decision needed to be accompanied by generous compensation packages for all those affected. Given that only three specific local areas were directly involved, this presented an opportunity for policy exploration and experimentation.

The three lignite regions, therefore, became potential testing laboratories for innovative industrial transformation policies. It is important to note that regional subsidies should not be viewed solely as compensation for job losses. Instead, they should be regarded as seed funding to foster the development of local environments conducive to the emergence of new green technologies. These technologies have the potential to not only shape the local economy but also to stimulate overall growth and generate economic benefits that extend well beyond the regions themselves. The aim of the substantial €40 billion investment, therefore, is to generate spillover effects and create a "win-win" situation. This could involve engaging in ambitious moonshot projects that would be far beyond the reach of regions that do not receive such significant financial support.

Whether the actually implemented policies in the three lignite mining areas have successfully achieved this goal is a separate matter that is not discussed in the current paper. However, for the purpose of our analysis, it is sufficient to recognize that implementing such an approach would be infeasible for the approximately 70 automotive regions or even for the subset of 30 regions heavily reliant on the combustion engine. The complexity and scale of transformation required in these regions make it challenging to replicate the same level of support and resources allocated to the lignite areas. With just three specific cases, the lignite regions, this policy approach appears more realistic and manageable in terms of focused implementation and evaluation.

5.2. General lessons for the design of proactive place-based policies

The case of the lignite phase-out underscores a crucial lesson: when designing PBPs, particularly proactive ones, it is imperative to strive for "win-win" potentials and positive externalities that benefit the treated regions receiving support, but also the overall economy. Embracing a zero-sum mindset that merely shifts transfers is misguided and counterproductive. Instead, a more effective strategy is to prioritize investments in education and infrastructure that have the power to unlock untapped economic potential, which would not materialize without the PBP (Boarini et al. 2019; Iammarino et al. 2019). By fostering the success of proactive PBPs in more developed regions (MDRs), the positive effects can ripple through to LDRs, particularly through the implementation of horizontal equalization schemes which automatically redistribute the gains.

Proactive PBPs and classical cohesion policy should be viewed as complementary approaches rather than mutually exclusive alternatives. If MDRs successfully navigate their own transformations and reap the benefits of proactive PBPs, there is room to augment classical cohesion efforts. Similarly, if the PBP in LDRs is enhanced and effectively supports their economic transition, it can yield positive outcomes also elsewhere. Additionally, it is important not to overlook the significance of incorporating both vertical and horizontal elements into PBPs. While horizontal equalization mechanisms operate in the background and contribute to equitable distribution, relying solely on this approach is insufficient. Including vertical elements contributes to an efficient allocation of resources, aligned with federal standards, and coherent with overall policy goals. But the induced growth effects of successful vertical policy interventions are then, to a certain degree, shared automatically by all regions within the economy.

Turning again to the case of the lignite phase-out, the financial support provided to the three regions far exceeded the assistance received by regional transformation networks in the automotive regions. However, if the latter approach proves successful in facilitating the required transformation, it could serve as a viable template for other regions and industries facing similar challenges. This is because the overall funds designated for the automotive clusters seem manageable for many other countries. In essence, it has the potential to become the foundation for future proactive PBPs, because of a useful institutional design on the program and its growth-enhancing focus. Nevertheless, comprehensive policy evaluation is essential to gauge the effectiveness and impact of such initiatives. Rigorous assessment should encompass various dimensions, including economic outcomes, social welfare, environmental sustainability, and the overall advancement of the targeted regions and industries.

By adopting these principles and continuously evaluating the outcomes of PBPs, policymakers can refine and improve their approaches over time. This iterative process enables the identification of best practices, the mitigation of potential pitfalls, and the maximization of positive synergies. Ultimately, the objective should be to create an ecosystem where PBPs not only drive regional development but also contribute to the broader prosperity and resilience of the entire economy.

Suedekum (2021) provides a further discussion about how to design PBPs in a growth-friendly manner. This discussion begins by emphasizing the importance of recognizing the diversity among regions and the need for tailored policy approaches that align with specific regional characteristics and challenges. One crucial aspect is the significance of identifying and nurturing regional competitive advantages. Policymakers should focus on supporting sectors and industries that have the potential for growth and innovation in each specific region. This entails leveraging existing regional assets, such as infrastructure, human capital, and natural resources, to foster economic development and attract investment. Moreover, it is crucial to prioritize policies that facilitate the creation and diffusion of knowledge and innovation within and across regions, as these factors are essential drivers of long-term growth (Balland et al. 2019).

Suedekum (2021) also emphasizes the importance of effective governance structures and institutional coordination. It stresses the need for collaboration among different levels of government, as well as with stakeholders from the private sector and civil society. Coordinated efforts are necessary to align policies, share knowledge, and pool resources effectively. Additionally, the establishment of transparent and accountable decision-making processes is crucial to ensure the efficient use of public resources and foster public trust in the policy interventions. Finally, the paper emphasizes the importance of incorporating flexibility and adaptability into PBP design. Given the dynamic nature of regional economies, policies should be designed to accommodate changing circumstances and respond to evolving challenges. This requires policymakers to have the ability to learn from past experiences and adjust policies accordingly.

In summary, PBPs need a proper economic and institutional design. This is true, in particular, when it comes to the design of proactive policies for current MDRs in order to generate spillovers to the rest of the economy. The discussion highlights the need for tailored and context-specific place-based policies that capitalize on regional competitive advantages, foster collaboration and effective governance, employ a comprehensive set of policy instruments, and exhibit flexibility and adaptability. By considering these do's and don'ts, policymakers can design growth-friendly PBPs that promote sustainable and inclusive development across regions.

6 Conclusion

Defining place-based policies (PBPs) is a complex task that requires careful attention to create a practical and useful definition for policymakers. Developing a clear and convincing narrative about PBPs is crucial, and it is important to better define the instruments that can be used in conjunction with PBPs. The focus should be on economic development as a central theme, ensuring its relevance and applicability. To integrate PBPs more effectively into mainstream economics, a shift in perspective is necessary. Recognizing the continuum of place-based policies, from highly place-based to less place-based approaches, can aid in this process. As PBPs evolve to address current and future challenges, it is essential to consider the shift from solely targeting lagging regions to adopting proactive policies that encompass a broader range of places. While avoiding overly broad definitions, it is necessary to acknowledge the significant heterogeneity among regions and make PBPs adaptable to their unique circumstances.

PBPs encompass both scope and scale dimensions. The scope involves determining the types of regions affected, such as Most Developed Regions (MDRs) or Least Developed Regions (LDRs), and considering multiple factors contributing to human and environmental well-being, not solely economic growth. The scale dimension concerns the size of the policy and the type of instruments used, influenced by agglomeration effects that can be challenging to counteract. To account for the heterogeneity among regions, a PBP definition should inherently incorporate this diversity. Additionally, considering PBPs as part of a larger system provides a more comprehensive understanding of their impact and interactions. It is vital to recognize the distinction between income redistribution through transfers and the geographical aspect of investments, as both play significant roles in PBPs and require careful consideration.

Regions differ significantly in their assets, including natural, infrastructural, industrial, human, and institutional resources. The ability to mobilize trans-regional assets varies among regions, and the success of actors depends not only on their abilities and resources but also on the quality of their surrounding environment. Recognizing these disparities is essential, as the concept of regional innovation ecosystems and cluster theory highlights the significance of the regional context for fostering success.

The geography of discontent has increased interest in PBPs, as people's mobility is not as high as assumed in traditional agglomeration models. Incorporating a place-based dimension in policies becomes necessary as people express their response to negative shocks through the ballot box rather than relocation. Recent evidence challenges traditional economic thinking by suggesting that PBPs can enhance overall welfare by mitigating negative externalities associated with agglomeration effects.

The perception of PBPs has shifted from being on the fringe to gaining broader acceptance among policymakers. Utilizing regional data and recognizing the crucial role of PBPs in addressing challenges related to the geography of discontent is now common. PBPs should prioritize well-being and focus on improving the quality of life within regions, considering the preferences and needs of local populations. Proactive policies should carefully consider potential winners and non-winners, assessing both aggregate and distributional effects.

Reducing inequalities is a crucial objective. Establishing policy principles that target quality-of-life metrics and ensure certain minimum standards are achieved in all regions is necessary. Defining minimum standards of quality of life and well-being for all places and people should guide policy development to promote equitable outcomes. Embracing a systems-level analysis and encouraging cross-pollination of ideas and initiatives is essential.

PBPs should not only concern lagging regions but also regions currently performing well but at risk of decline. Proactive policies should address challenges faced by lagging regions and should not be limited to the most developed or industrial regions. Considering temporal dynamics and accommodating different demographic groups and evolving societal needs is necessary for long-term effectiveness.

PBPs should aim to stimulate regional productivity and facilitate catch-up processes instead of opposing agglomeration economies. Spatial distortions hindering economic efficiency should be avoided, and policies should foster the development of productive capacities in regions. PBPs can complement traditional macro-structural policies by promoting productivity catch-up while leveraging the benefits of well-functioning metropolitan areas.

Implementing PBPs effectively requires addressing scale and boundary challenges. Fine-tuning PBPs to appropriate policy levels, such as the neighborhood scale, and considering policy boundaries are crucial aspects. Understanding the mobility patterns and preferences of different groups is essential for designing effective PBPs that reflect the diversity of mobile populations and account for their specific needs and circumstances.

Partnering with local organizations, gaining local knowledge, and building trust are vital for successful implementation of PBPs. Place-based leadership plays a critical role, and providing sufficient capacity to local actors for policy implementation and outcome monitoring is essential. Adequate resourcing is a prerequisite for successful PBPs, and capacity-building should be embedded in all initiatives, recognizing the importance of continuous training and development.

Assessing the impact of policies on places is challenging but necessary. Theory-based evaluation, focusing on understanding the logic and rationale behind policies, can provide an alternative framework. Evaluations should ideally be conducted by external teams to ensure objectivity.

Considering fiscal architecture in conjunction with PBPs is essential, particularly for supporting capacity development at subnational levels of government. Cohesion policy design aims to empower local regions and ensure equitable representation of diverse regions in policy discussions. Networks also play a crucial role at the subnational level, including migration and firm networks, which should inform the implementation of PBPs.

References

Acemoglu, D., J. Robinson (2013). Economics versus Politics: Pitfalls of Policy Advice. Journal of Economic Perspectives 27 (2): 173–192.

Acemoglu, D., P. Restrepo (2018). The Race Between Machine and Man: Implications of Technology for Growth, Factor Shares and Employment. American Economic Review

Acemoglu, D. and Restrepo, P. (2020). Robots and Jobs: Evidence from US Labor Markets, Journal of Political Economy 128(6): 2188–2244.

Albouy, D. (2009). The Unequal Geographic Burden of Federal Taxation, Journal of Political Economy 117, 635-666.

Andrews, D., Criscuolo, C. and Gal, P. N. (2016). The Best versus the Rest: The Global Productivity Slowdown, Divergence across Firms and the Role of Public Policy, *Working Paper No. 5*, OECD Productivity Working Papers, November 2016.

Autor, D., Dorn, D., G. Hanson (2013). The China Syndrome: Local Labor Market Effects of Import Competition in the United States, American Economic Review 103, 2121-2168.

Autor, D., Dorn, D., Katz, L. F., Patterson, C. and Van Reenen, J. (2020). The Fall of the Labor Share and the Rise of Superstar Firms, Quarterly Journal of Economics 135(2): 645–709.

Austin, B., E. Glaeser and L. Summers (2018). Jobs for the Heartland: Place-Based Policies in 21st-Century America. Brookings Papers on Economic Activity 2018(1), 151-255.

Balland, P.-A., R. Boschma, J. Crespo and D. Rigby (2019) Smart specialization policy in the European Union: relatedness, knowledge complexity and regional diversification, Regional Studies 53, 1252-1268

Barba Navaretti, G. and B. Markovic (2021), Place-based policies and the foundations of productivity in the private sector, https://www.oecd.org/regional/W2-S2-Navaretti-Markovic.pdf

Becker, Sascha O., Peter H. Egger, and Maximilian von Ehrlich (2010), Going NUTS: The effect of EU Structural Funds on regional performance, Journal of Public Economics 94, 578-590.

Boarini, R., F. Murtin and P. Schreyer (2015), "Inclusive Growth: The OECD Measurement Framework", *OECD Statistics Working Papers*, No. 2015/06, OECD Publishing, Paris, https://doi.org/10.1787/5jrqppxjqhg4-en

Bosquet, C. and H. Overman (2019). Why does birthplace matter so much?, Journal of Urban Economics 110, 26-34.

Chetty, R., N. Hendren and L. Katz (2016), The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment. American Economic Review 106(4): 855–902.

Collier, P. (2018), The Future of Capitalism: Facing the New Anxieties. Harper Collins

Dauth, W., S. Findeisen, J. Suedekum (2014). The Rise of the East and the Far East: German Labor Markets and Trade Integration. Journal of the European Economic Association 12 (6): 1643-1675.

Dauth, W., S. Findeisen, J. Suedekum (2017). Trade and Manufacturing Jobs in Germany. American Economic Review 107 (5): 337-342.

Dauth, W., S. Findeisen, E. Moretti, J. Suedekum (2022). Matching in Cities. Journal of the European Economic Association 20 (4): 1478–1521.

Fajgelbaum, P.D. and C. Gaubert (2020). Optimal spatial policies, geography and sorting. Quarterly Journal of Economics, 135 (2): 959–1036

Fajgelbaum, P.D., E. Morales, J.C. Suárez Serrato and O. Zidar. 2019. State taxes and spatial misallocation. Review of Economic Studies 86(1), 333-37.

Firgo, M. P. MayerhFofer, M. Peneder, P. Piribauer and P. Reschenhofer (2018). Beschäftigungseffekte der Digitalisierung in den Bundesländern sowie in Stadt und Land, WIFO Institute Vienna

Glaeser, E. and J. Gottlieb (2008). The economics of place-making policies. Brookings Papers on Economic Activity Spring: 155-253.

Henkel, M., T. Seidel and J. Suedekum (2021). Fiscal transfers in the Spatial Economy. CEPR Discussion Paper 12875. American Economic Journal – Economic Policy 13 (4): 433-468.

Hsieh, C.-T. and E. Moretti (2019). Housing constraints and spatial misallocation. American Economic Journal: Macroeconomics 11(2), 1-39.

Iammarino, S., A. Rodriguez-Pose and M. Storper (2019). Regional inequality in Europe: evidence, theory and policy implications. Journal of Economic Geography 19, 273–298.

Kline, P. and E. Moretti (2014). Local economic development, agglomeration economies and the big push: 100 years of evidence from the Tennessee Valley Authority. Quarterly Journal of Economics 129(1), 275-331.

McCann, P. (2020). Perceptions of Regional Inequality and the Geography of Discontent: Insights from the UK. Regional Studies, 54, 256–67.

McCann, P. (2023). How Have Place-Based Policies Evolved to Date and What Are They For Now? OECD Discussion Paper, Placed-based policies for the future. Paris.

Moretti, E. (2004). Workers' Education, Spillovers, and Productivity: Evidence from Plant-Level Production Functions, American Economic Review 94: 656-690.

Newmark, D. and H. Simpson. (2015). Place-based policies, in G. Duranton, J.V. Henderson, and W.C. Strange, eds., Handbook of Regional and Urban Economics, Vol. 5, Elsevier, 1197-1288.

Niskanen, W. (1975). Bureaucrats and Politicians. Journal of Law and Economics 18(3), 617-643.

Oates, W. (1972), Fiscal federalism, New York

OECD (2018), *Job Creation and Local Economic Development 2018: Preparing for the Future of Work*, OECD Publishing, Paris https://doi.org/10.1787/9789264305342-en.

OECD (2020), "Exploring policy options on teleworking: Steering local economic and employment development in the time of remote work", *OECD Local Economic and Employment Development (LEED) Papers*, No. 2020/10, OECD Publishing, Paris, https://doi.org/10.1787/5738b561-en.

Rosen, Sh. (1979). Wage-Based Indexes of Urban Quality of Life, in: P. Mieszkowsi, M. Stratzheim (Hrsg.): Current Issues in Urban Economics, Baltimore, MD 1, pp. 74-104.

Roback, J. (1982). Wages, Rents, and the Quality of Life, Journal of Political Economy, 90 (6), 1257-1278.

Rodríguez-Pose, A. (2017). The revenge of the places that don't matter (and what to do about it). Cambridge Journal of Regions, Economy and Society, 11 (1), 189-209.

Solé-Ollé, Albert (2023). When should place based policies used and how should they be articulated with other policy instruments?, preliminary paper, OECD and EC workshop "Place-based policies for the future"

Suedekum, J. (2021). Productivity policy for places – inclusive productivity. OECD-EC high-level expert workshop series Productivity Policy for Places, https://www.oecd.org/regional/W4-S2-Jens_Suedekum.pdf

Winnick, L. (1966). Place Prosperity vs People Prosperity: Welfare Considerations in the Geographic Redistribution of Economic Activity, in Essays in Honor of the Sixty-Fifth Birthday of Leo Grebler, pp. 263-283, Real Estate Research Program, University of California, Los Angeles