European Union place-based policies: contrasts and similarities to the US experience

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ABSTRACT

The European place-based policy framework was established in the European Treaties and has a current budget of $60-70 billion per year. This paper identifies key features and directions for its future development with respect to four place-based problems: traditionally lagging regions; contemporary distressed (or left-behind regions); the challenge of spreading prosperity faced with the uneven geography of technological clusters and routine technology-based manufacturing; and the place-based challenges of transitioning from fossil fuels and adapting places to climate change. We analyze the place-based features of EU Cohesion Policy, its commonalities and differences with place-based policies in the US. We evaluate policies against a structural backdrop of long-term convergence in the two continents and the contemporary geography of spatial divergence, using both historical perspectives and recent policy evaluation evidence. Key differences are identified in policy programming, implementation, budgeting and time horizons. While there has been evidence for limited policy success in both continents, there are also serious impediments to successful policy in both. These limits have to do with how well policy is designed with respect to economic geography fundamentals as well as political economy problems in policy design, implementation and governance.

1. Introduction: place-based policies in the context of long-term spatial integration and shocks to spatial allocation

One of the original justifications for creating the institutions that would become the European Union (EU) was to achieve continent-wide economic integration, through the free movement of goods and people and the institutional and legal completion of a single European market. Even in its initial membership structure of mostly north-western European countries, the EU inherited a landscape that included some long-standing lagging regions. Since then, the changes promoted by economic integration -- including greater firm-level economies of scale, increasing agglomeration of skilled activities, and both intra- and inter-country sorting of labor -- have had uneven geographical effects and promoted new forms of spatial inequality. Subsequently, the addition of many new member states after the fall of the Soviet Union presented the EU with the challenge of integrating countries with much lower income levels than the previous members. In addition to these changes, the world economy has gone through two major geographical shocks since 1980: the strong agglomeration forces of the Third Industrial Revolution, and the negative shocks to many formerly prosperous regions from globalization and automation. Throughout the period marked by these changes in geographical-economic fundamentals, policies for territorial development have been central to the mission of the European Union. Many of these policies are explicitly devoted to promoting convergence, while others attempt to reduce inherited spatial inequalities and to counter certain spatial inequalities generated by convergence processes.

In this paper, we carry out an asymmetrical comparison, in the sense that we concentrate on the EU's place-based policies but use the American experience as a counterpoint and backdrop to bring out commonalities and differences. We show that there are some broadly similar processes that shape economic geographies of the US and the EU, but that there are also some important differences in underlying economic geographies and integration processes, as well as the timing, historical context, path dependencies and governance of policies that interact with such economic geographies.

Section 2 discusses the long-term process of economic convergence in the EU and the USA, and the contribution of place-based policies to it. In contrast to Europe, the US has a longer experience with integration but much of it was achieved with policies that did not have explicit place-based convergence labeling. Section 3 surveys the increasing spatial inequalities in both continents after 1980, due to the twin shocks of the Third Industrial Revolution and globalization. Section 4 discusses policies for traditionally lagging regions; Section 5 policies for distressed regions; Section 6 reviews policy attempts to spread technology-based prosperity; and Section 7, emerging place-based policies for the energy transition and climate change adaptation. Section 8 then draws the analysis together

by considering a broad set of similarities and differences in how the USA and the EU practice place-based policies. In the concluding section (9) we trace key problem areas for research and practice today.

2. Economic Integration: today's EU Member State convergence effort compared to post-war US post-war inter-state convergence

Contemporary European place-based policy can only be compared to the US experience by understanding their respective backgrounds in spatial-economic integration, where Europe is engaged today in what was achieved several decades ago in the USA. Thus, in this section, we consider the respective integration and convergence backgrounds. European integration and ongoing completion of the single market can be thought of in light of the American "achieved single market" in the 1945-1970 Sunbelt period. Unlike the US, the European Union is an economic entity in ongoing evolution. For example, while inter-state per capita income differences in the USA have been reduced to an order of 1:1.5, in Europe the gap between the poorest Member States and the highest income is about 1:5; since the 1970s it has enlarged from six Members to twenty-eight (and then twenty-seven). Ukraine, Moldova and six countries in the Western Balkans are now candidates for membership. Moreover, at a more granular inter-regional scale, integration has in some cases accentuated regional disparities between more prosperous and less developed Member States because its mechanisms of increased competition, specialization-agglomeration effects and increasing firm- and unit-level economies of scale with redefined market areas; these favor certain regions, and those regions are unevenly distributed within and between Member States. The European Union has therefore designed policies to help accelerate the development and adjustment of less developed regions.

Notwithstanding these challenges, according to the World Bank, since its foundation more than 60 years ago, the European Union has become the modern world's greatest "convergence machine," propelling poorer, and newer, member states to become high-income economies, and delivering to its citizens some of the highest living standards and lowest levels of income inequality in the world. (Gill et al., 2012; World Bank, 2018). The average GDP per capita in the Member States that joined the EU since 2004 has seen an increase in GDP from about half of the EU average in 2004 to nearly 80 % in 2023. This upward convergence has been driven by an increase in productivity (GDP per person employed) in less developed regions. This catching-up also enabled tangible social progress, for instance in terms of better health outcomes, and reductions in unemployment and poverty rates across almost all regions over the last ten years (Figure 1,2).[1] Moreover, both convergence processes left behind certain traditionally lagging regions. In the USA, these were certain

low-income regions in the most rural parts of the South, as well as other historically lagging and remote regions such as Appalachia, the Tennessee Valley or the Upper Great Lakes. In Europe, persistent traditional lagging regions such as the Italian Mezzogiorno have long been resistant to full catch-up convergence, in spite of sustained, large-scale policy efforts on their behalf.

Integration and the reduction of regional disparities are explicit policy goals of the EU and they are embedded in the EU Treaties. The most important place-based policy effort in the European Union is the Cohesion Framework, which is intended to support the development of the Single Market which aims to make Europe into an integrated economic space with high levels of capital and labor mobility and more efficient spatial factor input matching, higher degrees of specialization, more efficient scale of firms and agglomerations, more competition, and more knowledge spillovers. It therefore behooves us to compare the EU integration process and the role of cohesion policy to the earlier American integration and convergence process.

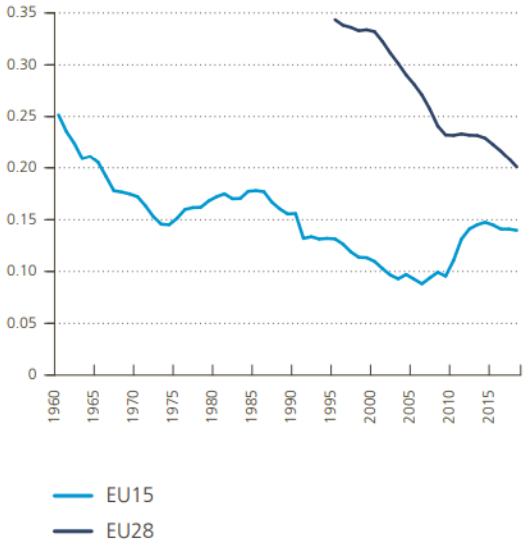


***Figure 1**: Member State convergence in the European Union (Source: Bisciari et al., (2020)). Population-weighted coefficient of variation (SD/mean) of EU countries' GDP per capita in PPS.*

The evolution of incomes in Europe today resembles somewhat what occurred in the American South decades in the post-1945 period. There is notably a catch-up trend in Eastern European Member States.

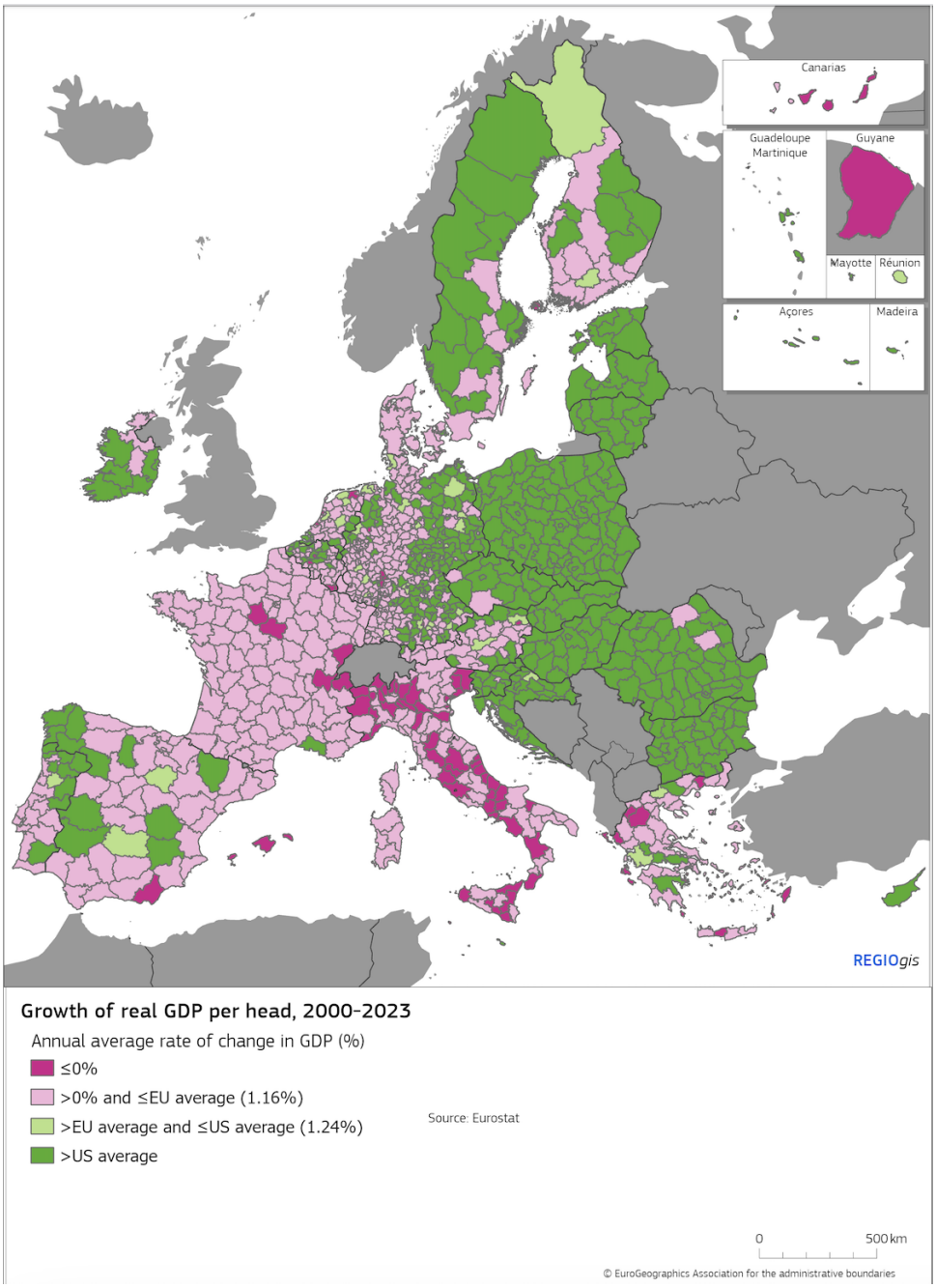


***Figure 2**: Catch-up convergence in the EU (Source: European Commission).*

European convergence is occurring in the context of a big bang (Single Market Act) coupled to a comprehensive policy with economic convergence as an explicit goal. By contrast, while (especially since the New Deal) there have been major federal infrastructure and federal investment (defense procurement, R&D) that promoted convergence, there has rarely if ever been explicit federal

convergence policy.[2] At first glance, there are some common large-scale policy instruments that underpin integration and convergence in the US. These are mostly redistributive mechanisms: ongoing federal government financing of infrastructure (mostly highways and airports and ports) is a rough equivalent to the public investment features of EU cohesion policy.

But there are significant differences in historical context and the role of explicit cohesion policy in the two contexts. The structure of American federalism, in comparison to EU policy governance, makes explicit convergence policy (i.e. a declared "convergence goal") less likely in the US as compared to Europe, instead directing attention to specific measures such as infrastructure investments.[3] But there is, in effect, a national commitment to integration: the US Constitution contains a Commerce Clause that prohibits the states from any measures that would limit free trade and movement between the states of the USA.

Even with this late-18th century commitment, the means to generate integration have emerged via gradual historical processes, and this mirrors Europe. Because of this parallel, it is relevant to remember the basics of the history of US expansion and integration. The US achieved monetary integration around the US dollar in 1836; it annexed colonial Spanish, French, Russian and Mexican territories throughout the 19th and 20th centuries and fought wars (and practiced significant forced migration) against indigenous peoples in all of them, thus opening up land for its settlers. It developed integration institutions, including a central bank (1913) to provide monetary policy influence over the economy in the early 20th century and increased federal fiscal capacity through the direct federal income tax, which came about via the 1909 16th Amendment to the Constitution, and ratified in 1913, and confirmed by the courts in 1916). Critically, even though the US constitution allocates quite restricted powers to the federal state and defaults considerable powers to the States, a powerful federal government evolved in the New Deal era (Gerstle, 2016). This was done by using the enhanced monetary and fiscal powers to exchange investments for state-level legal/constitutional "embodiment"[4] (called "transposition" in the EU) of federal laws and policy objectives, effectively working around in practice the constitutional division of powers. This maneuver expanded federal influence over integration, convergence and territorial development. This expansion is the subject of ongoing contestation over federal powers today between the states, interest groups, and the federal government. It takes place in Congress and through the courts.

Despite this contentious political history and ambiguous legal framework for integration and federal interventions, certain fundamentals of the American economy may have lent strength to historical convergence processes there as compared to contemporary Europe. Historically (and especially 1880-1980, following the end of the Indian Wars) American integration was accompanied

by high levels of long-distance population sorting, even though in the USA such historically high levels peaked in 1980 along with other structural changes (Ganong and Shoag, 2017). Europe doesn't have those levels. In the post-1945 period, moreover, there was an epochal redistribution of American population South and West – the Sunbelt – involving the diffusion of high levels of urban development to the entire country, coupled to expansion of national over regional product markets and supply chains, underpinned by infrastructural improvements to facilitate integration.

In the case of the EU, the focus of policy for Member State convergence is the "catching up" of less developed regions. But it also covers other types of regions that threaten convergence, including industrial areas in decline, remote rural areas, and deprived urban areas.

In this light we can ask how post-war inter-state convergence was generated in the absence of a coherent explicit national policy in the USA. What were these forces? Starting in the 1950s, and in the context of the Cold War, there were many federal investments such as the space program's centers in Florida, Texas and Alabama. These strengthened integration by generating a higher skills base in the generally unskilled South, generating certain local pockets of high-skill development. By the 1960s, many of these initial conditions had come together into a powerful set of attractors of employers and households to certain regions of the South.[5]

For both the American and European cases, we lack full understanding of the causes of catch-up convergence and its limits. In the US case, there is a long and unresolved debate over whether the diffusion of development from the Frostbelt to the American Sunbelt South was initially unleashed by "jobs moving to people, with people moving first," or "people moving to jobs, with jobs moving first." The classical Roback-Rosen-Glaeser-Tobio-etc papers argue that households started massively moving to the South in search of sunny climates, cheaper housing and a sprawling suburban lifestyle, or what they call amenities-driven migration (Glaeser Tobio, 2007).[6] But the sequence of causality is just as plausibly the opposite. There has long existed scholarly literature on a view opposite to the Glaeser model, considering migration to be the egg rather than the chicken of the Sunbelt boom (Muth, 1971). In support of this view, the US Congress recognized the beginnings of a tidal wave of relocation of manufacturing from the North to the South in 1947, in a report entitled *Why Industry Moves South* (McLaughlin and Robock, 1947).[7] 1947 was well before the beginnings of the Interstate Highway System, the widespread use of air conditioning, or suburban development of the South, the factors that are said in the standard model to have set off Sunbelt development. In this alternative view of causality, the main process that set off Southern development and upward convergence, pulling migrants in, was the movement of private sector jobs to the south, mostly in manufacturing, and mirrored by nascent deindustrialization of the north starting in the 1940s, pushing migrants out of the

Northeast and Midwest. Subsequently, the process became self-reinforcing as the trade-able sector's incomes generated a growing non-tradable sector in services and land development.

In any event, however we assign initial causality for the shift, for the purposes of a US-Europe comparison, the implication is similar: contemporary EU integration is not accompanied by the same kinds of population reallocation processes but does share some of the employment reallocation processes that were present in the industrialization of the South and its role in enhancing inter-state convergence.

In addition, there is a regional dimension of American convergence that has no equivalent in Europe: California and the West Coast. California is sometimes included in the category of Sunbelt, in that it contributed to the above mentioned dispersion of population and urbanization of the USA. But California followed a different development process from the Southern and inner Southwestern Sunbelt. California took the "high road," generated not by employers looking for lower wages and land costs, but by massive investments in R&D and education, coupled to an in-migrant population that tended to be wealthier and more educated than the country in the first place; and culminating in the creation of a wide variety of cutting-edge innovative clusters.[8] Whether or not California's clusters were generated by explicit policy or not (and they largely were not), there is no California equivalent in the recently-integrating parts of Europe that could contribute to spatial diffusion and convergence as the West Coast did in the USA.[9] In addition, we discuss later on (sections 6 and 9) that, indeed, Europe's lack of world-leading first-mover clusters is a problem for European economic performance today and is an important challenge to European place-based policy.

Another way to frame any comparison of European and American integration experiences is to consider earlier efforts at convergence within Member States, predating the creation of the European Union and ongoing today at the national scale. For example, in 1947, Jean-Francois Gravier wrote a call to arms in France, entitled "Paris and the French Desert" (Gravier, 1947). He called for both active national integration and active policies to spread the wealth away from what he considered to be an economy overly concentrated in the Paris region. Decades of policy effort followed, including both activist indicative planning and deliberate infrastructure policy, under the aegis of a national spatio-economic indicative planning agency (*Commissariat General au Plan (Cohen,* 1969). In 1947, the Paris region accounted for about 22% of the French population and 33% of output; today, those figures are unchanged. Italian integration in the post-war period was accompanied by activist policy to spread the wealth to the southern third of the country (*Cassa per il Mezzogiorno*). But north-south convergence never occurred in Italy. The UK experimented with industrial relocation subsidies in the post-war period, but the role of greater London in the British economy remains as

strong as ever, as reflected in ongoing calls to "level up" the North (Fransham et al., 2022). We return to these experiences briefly in Section 4's discussion of lagging region policies.

These national integration and policy frameworks in European countries did not change their fundamental spatial allocations in the way that the American experience of Sunbelt + California development did in the USA, even in a period of rapid post-war growth in Europe. This might reflect historical and structural differences (demography; land abundance; migration propensities; innovation) lead to more stable spatial allocations in Europe than in the USA. The geographical responsiveness of the two economies to changes in structural forces may therefore be fundamentally different.[10]

3. The Economic Geography of the post 1980 post-manufacturing economy: place-based challenges in an era of spatial economic divergence

Against this historical background of inter-state and inter-member state catch up and convergence processes described above, both Europe and the USA experienced a significant shock to economics and economic geography in the form of the Third Industrial Revolution (the post-manufacturing economy). This shock was complemented by an offshoring shock from globalization, especially the China Syndrome after 2000.

There are two salient features of this, for the purposes of the present analysis. The first is the end of inter-state convergence in the USA. The second is that in both Europe and the USA, spatial-economic divergence has increased since 1980 at national level and is observable at the CZs, NUTS3, and TTWAs (Figures 3-5, below). The situation in the EU is quite complex since 2000, where falling disparities at NUTS3 level for the EU have been combined with increasing disparities at national level in fast growing Member States. In some Member States disparities have been falling.



***Figure 3**: The end of regional convergence in the US, 1960-2019 (source: Martin, 2021).*

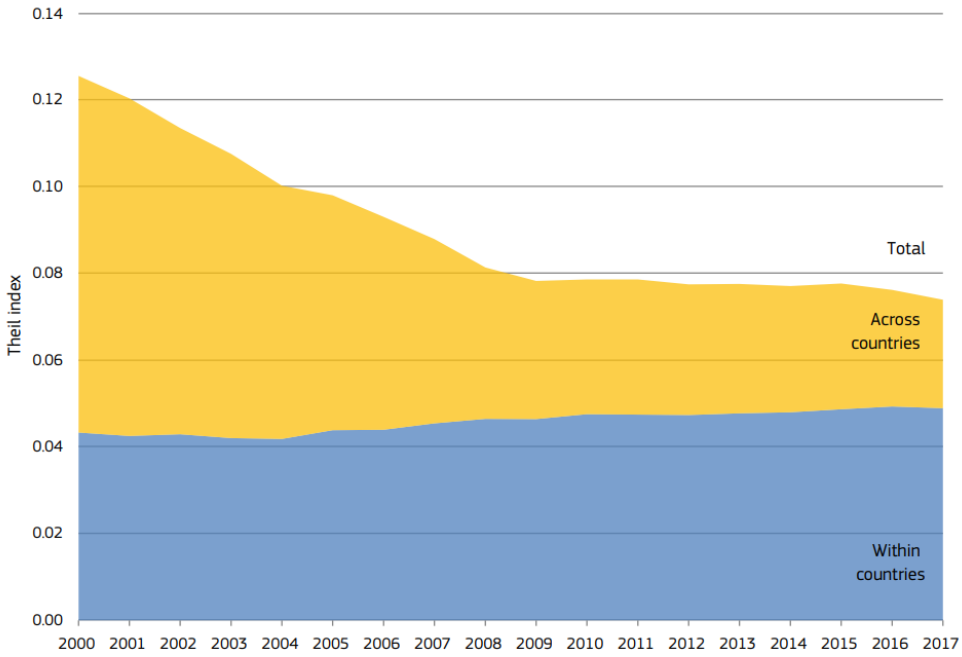


***Figure 4**: Theil index, GDP per head, NUTS 3 regions (Source: European Commission, 2023).*

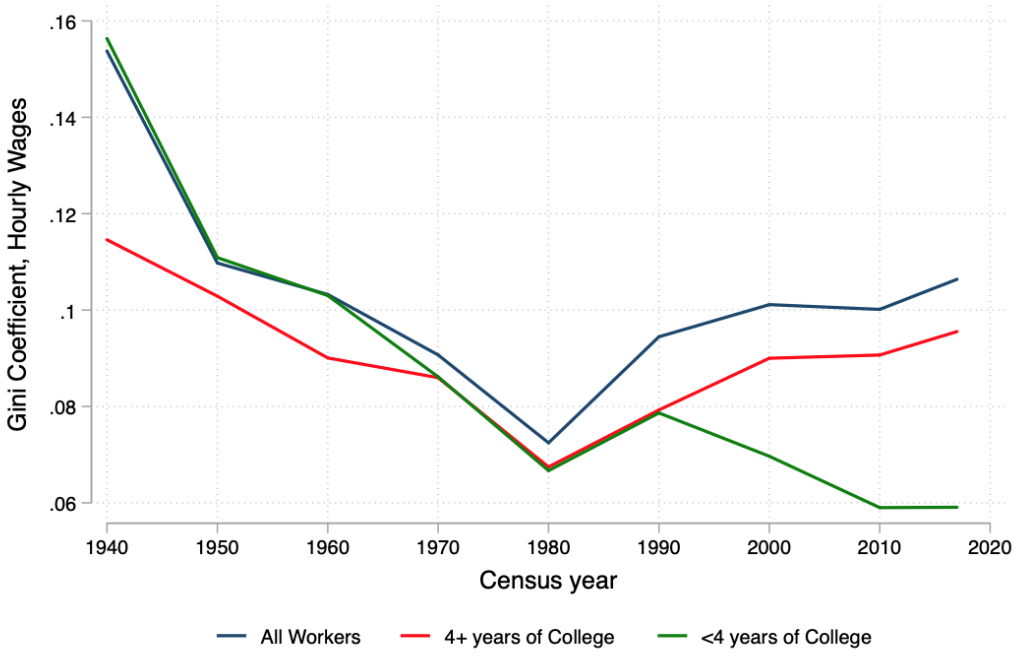


***Figure 5**: Trends in wage inequality by education levels in the US, 1940-2020 (Source: Kemeny and Storper, 2022).*

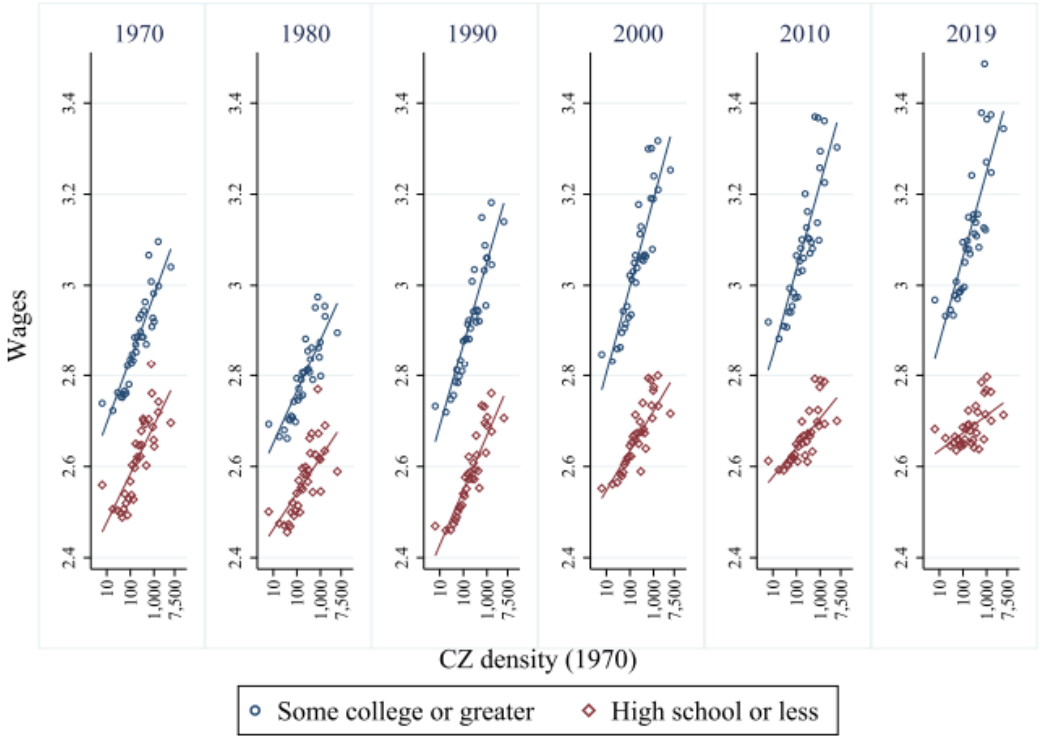


***Figure 6**: Wage trends by education levels and CZ density in the US, 1970-2019 (Source:).*

A key driver of such divergence, in both the USA and Europe, is occupational-wage polarization of the Third Industrial Revolution, coupled to agglomeration of skilled work, sorting of the skilled to large metropolitan areas, and the growth of urban wage premiums for the skilled (Figures 6,7). In contrast, the middle-skilled increasingly sort out of such metropolitan areas, leading them to be increasingly inter-regionally separated from the college-educated. There is also generalized spreading of low wage work throughout the economy and its regions (Diamond and Gaubert, 2022). The result is an uneven landscape of both nominal and real incomes.

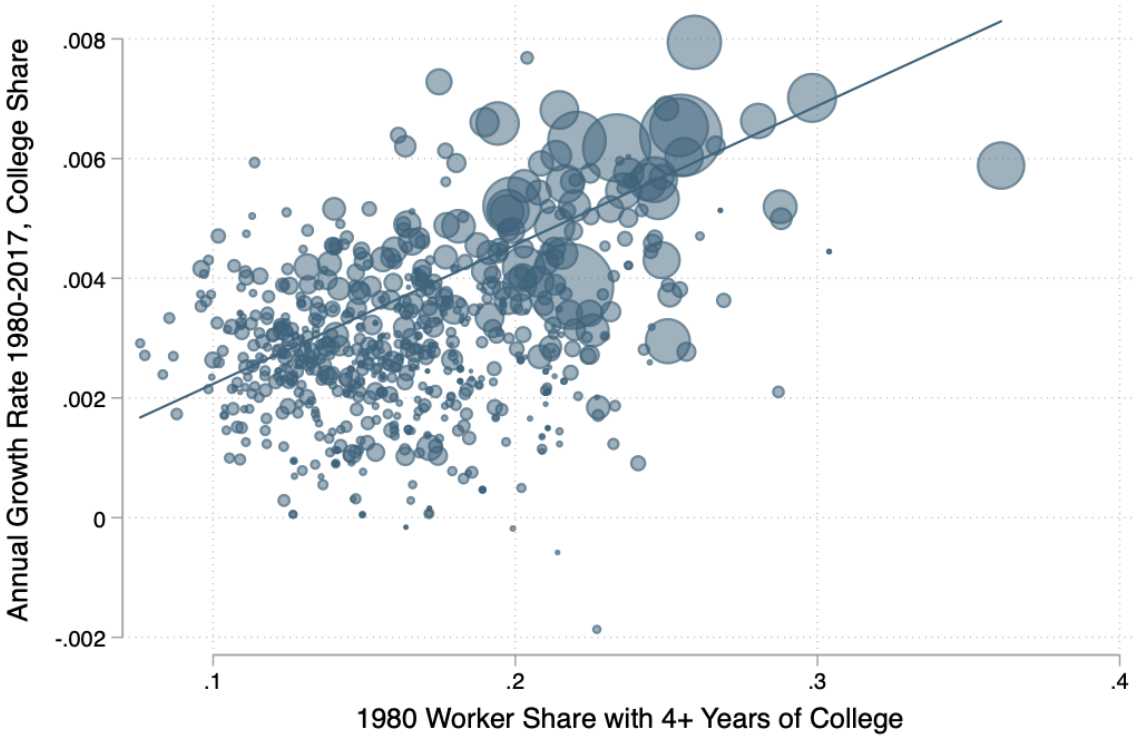


***Figure 7**: 1980 college-educated worker share and college share growth rate in the US, 1980-2017 (Source: Kemeny and Storper, 2022).*

Almost all of the aggregate divergence in both the EU and the USA comes from the Superstar metro regions (large, high-income metro areas), whose nominal and real incomes diverge increasingly from the rest beginning in 1980 (Kemeny Storper, 2022). These places also grow bigger and more skilled compared to the rest of their national economies. Increasingly, national economic performance is based on the size and output of these regions (Figure 8).

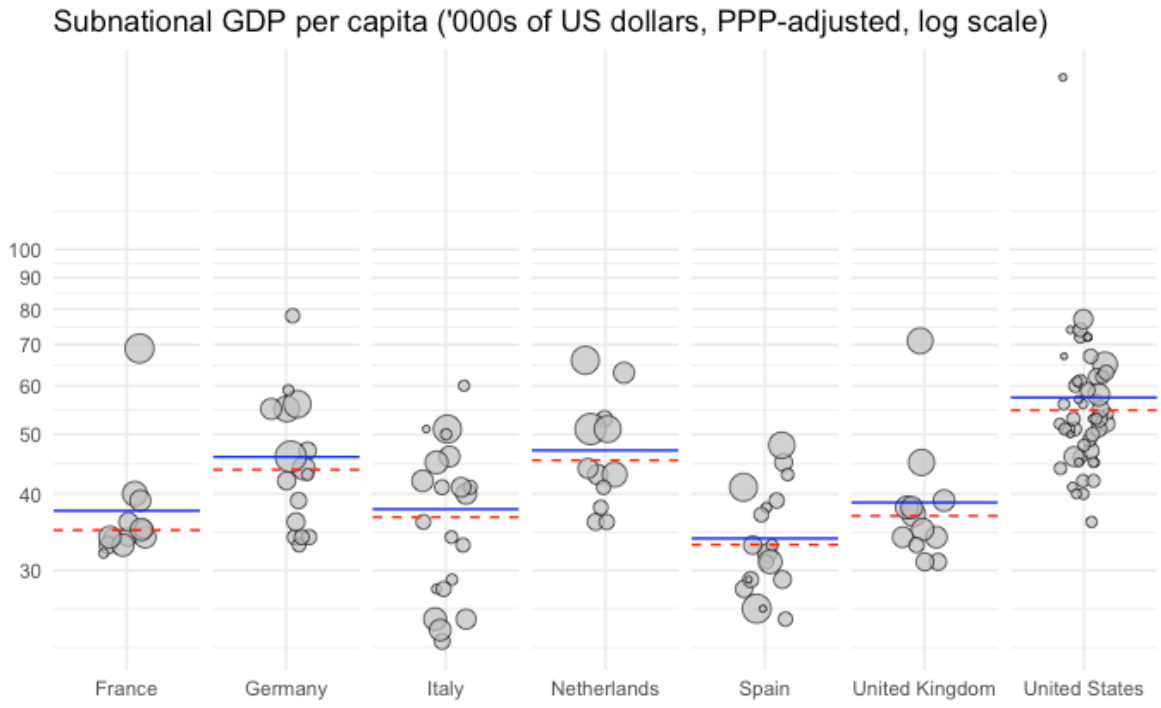
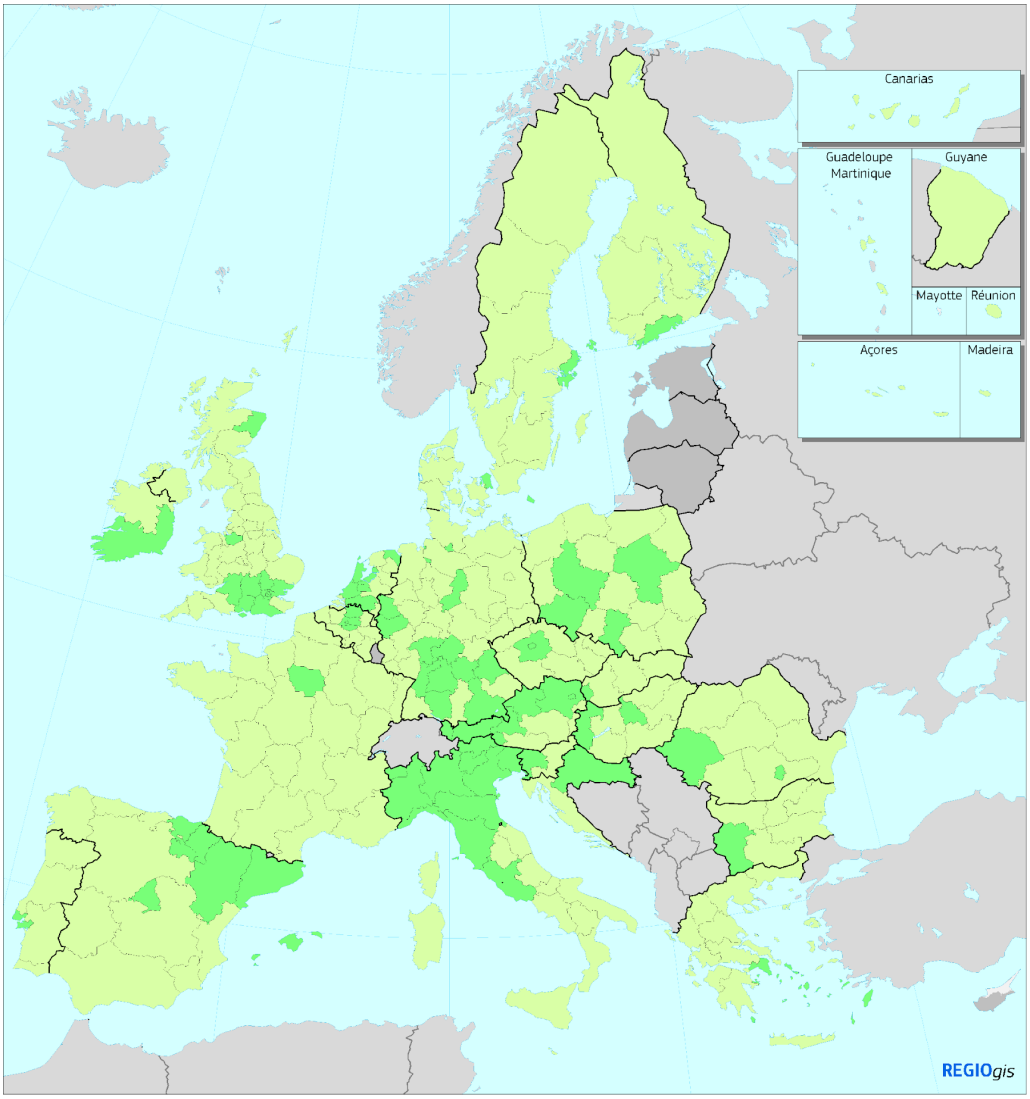


***Figure 8**: Subnational GDP per capita ('000s' of US dollars, PPP-adjusted, log scale) with national average (blue line) and with richest region removed (red line). (Data: OECD Regional Statistics).*

Another way of visualizing this situation in Europe is to consider whether regions, in per capita income terms, have evolved in concert with their respective national economies, and a similar but more complete picture emerges (Figure 9).



Over-performers and under-performers

underperformer
overperformer
not applicable

Source: Eurostat, DG REGIO

0 500 km

© EuroGeographics Association for the administrative boundaries

***Figure 9**: Regional economic performance in Europe: over- and under-performing areas.* (Source: Diemer et al., 2022).

Going forward, no matter what the degree of Europe-wide convergence between member states is achievable, there is likely to be some additional level of intra-member-state geographical polarization and growing spatial inequality at that scale. [11] In this, it will probably mirror what has already occurred in the USA in the Sunbelt integration process from 1940 onward: as Europe pursues more integration, it will be faced with more spatial inequality within member states (Letta, 2024). Moreover, even in the USA, with its higher level of scale-based integration, many spatial economists consider that it is still not at "optimal spatial allocation" because of ongoing/residual or new (endogenous) housing and migration frictions and such optimal spatial allocation models call for more spatial-income polarization, not less (e.g. Hsieh/Moretti, 2019; Duranton and Puga, 2023).

In both Europe and the USA, there is significant draining of youth and talent to cities in general and large, skilled metro regions. In the USA, there has been a significant overall decline in long-distance migration from 1980 onward compared to the high rates of 1880-1980 (e.g. Ganong and Shoag, 2017; Ferrie and Hatton, 2015). Coupled to this, migration has become much more distinctly skill-directional, with the college educated moving up the hierarchy, and the non-college down it. In Europe, similar dynamics are at work. This places pressure on other regions, who are losing their young and educated to a skilled economy characterized by rising wage premiums to large metropolitan areas, with their accumulating amenities and experience-based careers (de la Roca and Puga, 2017). In the following figures, we see this very clearly in the European context (Figure 10,11).

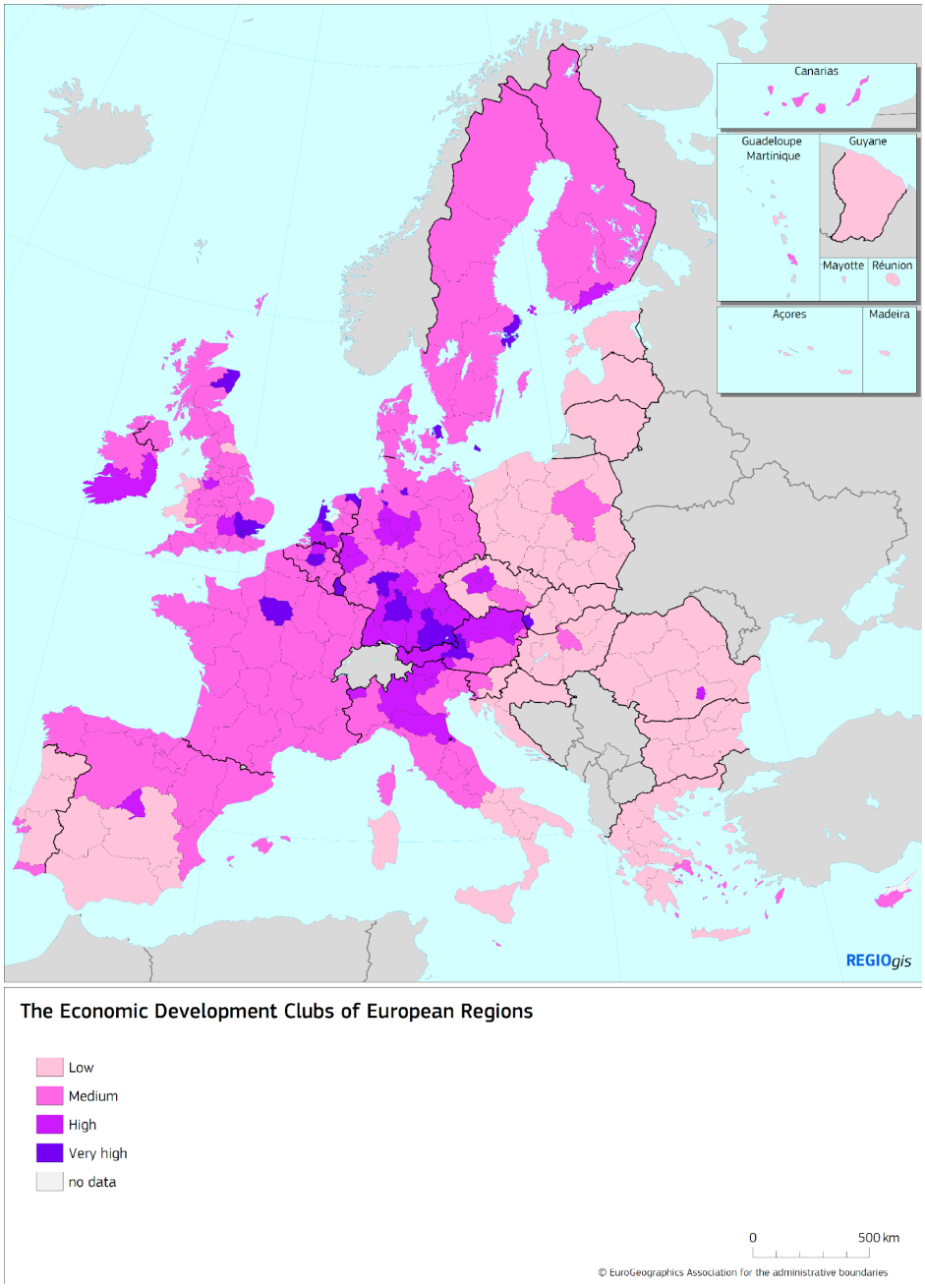


***Figure 10**: Economic development levels across European regions (Source: European Commission).*

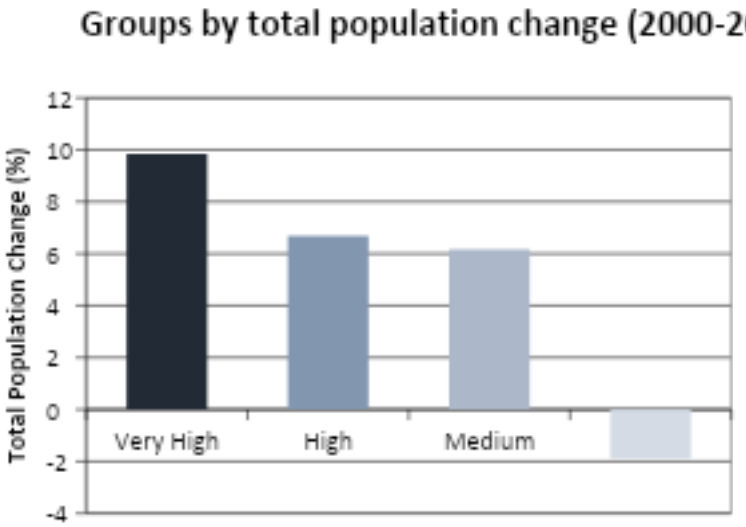


***Figure 11**: Population change by growth group in European regions, 2000-2014 (Source: European Commission).*

3.1 Common place-based challenges

These above noted fundamentals of contemporary economic geography lead to four broad potential place-based problems that are the natural targets of place-based policies. First, in Section 4 we discuss policies to assist traditionally lagging regions, those that, even in high-income countries, have lagged national development for a long time. These regions often contain some combination of pockets of long-term poverty, low education levels, remoteness, and poor governmental institutions, including endemic corruption in some cases. Second, Section 5 will review policies for distressed regions, those that were formerly prosperous, notably in the manufacturing era, but that since have suffered deindustrialization shocks and associated declines in labor force participation, difficulties in reconversion, and have often accumulated vicious circles of social problems. Third, the high levels of spatial concentration of skilled work, due to intersecting agglomeration economies of the Third Industrial Revolution, have generated interest in spatial innovation policies whose ambition is to spread or more widely stimulate such development. This way of thinking takes two major policy forms that we will discuss in Section 6. The first are policies that go under the rubric of stimulating the diffusion of "high technologies," mostly in the form of reindustrialization strategies in sectors or activities in the "high tech" area; the second is to stimulate high-tech clusters or agglomerations (Silicon valleys, glens, etc). Finally, a more recent type of the fourth type of place-based policy aims to smooth the transition to away from fossil fuels toward less carbon-intensive energy sources, on one

hand, and to cope with climate vulnerability, on the other (i.e. place-based mitigation of effects, or "resilience") (section 7). (Table 1).

Place-based policy area	EU	USA
Lagging region development	Long-standing treaty objective	Development policies are typically localized
	Consumes the bulk of resources	National initiatives largely focus on regional commissions or target groups
Distressed areas	Strong focus in early years of policy	Explicit objective of a range of programs
	Increasingly integrated into larger regional programs	Strong focus on employment measures
Spatial innovation policies	Strong focus on process within regional programs	Combination of national schemes and local public and private resources
	Covers all regions	Cluster and hub development in specific cities and regions
	Main instruments are grants and loans	Significant resources for private sector investment through tax credits; some sector specific funding delivered through grants and loans
Climate objectives	Significant expenditure on climate mitigation and adaptation	Strong focus on renewables and clean technology at the federal level
	Dedicated program for just transition in fossil fuel and energy intensive areas	Significant resources for private sector investment through tax credits

Table 1: *Introduction to the four place-based policies areas in the EU and US.*

3.2 A brief history of EU place-based policy

The EU and the US both have long histories of place-based or place-impacting policies, as shown in table 2 (EU) and table 3 (US).

Period	Objectives	Geographical Coverage
1988-1993	Promoting development and adjustment of lagging regions	< 75% EU gdp/per head
	Converting areas seriously affected by industrial decline	Industrial regions
	Combating long-term unemployment	All regions
	Facilitating the occupational integration of young people	All regions
	Speeding up the adjustment of agricultural structures	All regions
	Promoting the development of rural areas	Rural areas
	10 community initiatives	Targetted according to theme
1994-1999	Promoting development and adjustment of lagging regions	< 75% EU gdp/per head
	Converting areas seriously affected by industrial decline	Industrial regions
	Combating long-term unemployment and supporting (young) people into the labor market	All regions
	Facilitating the adaptation of workers to industrial changes and changes in production systems	All regions
	Speeding up the adjustment of agricultural structures (alongside reform of CAP)	All regions
	Facilitating the development and adjustment of rural areas	Rural areas
	12 community initiatives	Targetted according to theme
2000-2006	Promoting the development and adjustment of lagging regions	< 75% EU gdp/per head
	Supporting economic and social conversion of areas facing structural difficulties	Industrial , rural and urban areas
	Supporting the adaptation and modernisation of policies and systems of education, training and employment	All regions
	4 community initiatives	Targetted according to theme
2007-2013	Convergence: Speeding convergence of least-developed Member States and regions	< 75% EU gdp/per head
	Competitiveness and employment: Strengthening regions' competitiveness and attractiveness as well as employment	All developed regions > 75% EU gdp/per head
	Territorial cooperation: Strengthening cross-border cooperation, transnational and interregional cooperation and exchange of experience at the appropriate territorial level	Border regions
2014-2020	Strengthening research, technological development and innovation	All regions
	Enhancing access to, and use and quality of, ICT	All regions
	Enhancing the competitiveness of SMEs	All regions
	Supporting the shift towards a low-carbon economy in all sectors	All regions
	Promoting climate change adaptation, risk prevention and management	All regions
	Preserving and the environment and promoting resource efficiency	All regions
	Sustainable transport and bottlenecks in key network infrastructures	All regions
	Sustainable and quality employment and supporting labour mobility	All regions
	Social inclusion, combating poverty and discrimination	All regions
	Investing in education, training and vocational training for skills and lifelong learning	All regions
	Enhancing institutional capacity of public authorities and stakeholders and efficient public administration	All regions
	European territorial cooperation	Border regions
2021-2027	Competitive and smarter Europe	All regions
	Greener, transitioning to net-zero economy, and resilient Europe	All regions
	More connected Europe	All regions
	More social and inclusive Europe	All regions
	Europe closer to citizens	All regions
	European territorial cooperation	Border regions
	Just transition	Regions dependent on fossil fuel production and energy intenstive industries

Table 2: *Development of place-based policy objectives in the EU over time.*

Period	Objectives	Geographical Coverage
1930s - 1940s (New Deal Era)	Promoting economic recovery through public works and rural electrification (TVA, WPA)	Industrial and rural regions heavily affected by Great Depression
	Combating unemployment through federal job creation programs	All regions; emphasis on distressed areas
	Infrastructure development (highways, dams, public buildings)	All regions; emphasis on lagging areas
	Promoting agricultural stability and adjustment	Rural regions
1960s (War on Poverty Era)	Reducing poverty and unemployment through education, job training, and welfare (Economic Opportunity Act, Community Action Programs)	Economically disadvantaged urban areas (some rural)
	Facilitating access to healthcare and housing (Medicare, Medicade, HUS)	All regions; focus on underserved populations
	Rural development through the Agricultural Stabilization and Conservation Service	Rural regions
1970s - 1980s (Decentralization and Block Grants)	Supporting regional economci development through more localized control (Community Development Block Grants)	All regions
	Adapting workforce to changing industrial patterns (Empowerment Zones)	Urban regions and deindustrializing areas
	Fostering state-driven welfare reform (New Federalism, decentralization of social programs)	All states
1990s (Post-NAFTA and Welfare Reform)	Transitioning from welfare to work-based programs (Personal Responsibility and Work Opportunity Act)	All regions
	Adapting to globalization and trade liberalization (NAFTA, WTO agreements)	Manufacturing regions, especially Midwest and Rust Belt
2000s (Deindustrialisation; Globalization Response)	Supporting economic recovery in deindustrialized areas (Economic Recovery Act)	Rust Belt and regions hit by manufacturing job loss
	Addressing the housing crisis and financial meltdown (Emergency Economic Stabilization Act)	National scope, with focus on hardest-hit housing markets
2016-2020 (Trump Administration)	Revitalizing domestic manufacturing and addressing globalization's impact (tariffs, trade negotiations, Buy American policies)	Industrial regions, especially Rust Belt
	Supporting energy independence and coal regions (energy policy shifts)	Fossil fuel communities
Since 2021 (Biden Administration)	Investing in infrastructure and green energy (IIJA)	All regions; significant investments in decarbonization
	Reshoring tech manufacturing, especially semiconductors (CHIPS and Science Act)	All regions; emphasis on vulnerable and underfunded areas.
	Addressing climate change and supporting climate-vulnerable communities (IRA)	Industrial and trade-sensitive regions
	Securing supply chains and promoting US leadership in green technology	Battery belt; competitive cities and regions

Table 3: *Development of place-based policy objectives in the US over time.*

The current cohesion policy framework of the EU is embodied in the following four funds, each of which is then administered through a wide variety of constituent programs and objectives (discussed in more detail in following sections):

- The European Regional Development Fund (ERDF), established in 1973, which supports regions whose development is lagging behind and regions with structural problems (distressed regions). It primarily finances investments aimed at strengthening the competitiveness of SMEs, innovation, digitalisation, energy efficiency, environment, energy, climate and education and social infrastructure. It thus encompasses a wide variety of programs aimed at stimulating innovation and spreading it.
- Established in 1957, the European Social Fund's (ESF) main goal is to improve employment opportunities, to increase geographical and occupational mobility within the Union, and to

facilitate adaptation to industrial change and to changes in production systems, including fostering social integration and combatting discrimination.

- Established in 1995, the Cohesion Fund provides support exclusively for environmental goals and to Trans-European Transport Networks. It is restricted to EU countries whose per capita income is below 90% of the EU average and operates at the national level.
- Established in 2021, the Just Transition Fund's objective is to help regions and people to address the social, employment, economic and environmental impacts of the transition towards the Union's 2030 targets for energy and climate and a climate-neutral economy of the Union by 2050.

As shown in Table 1, in both the USA and the EU, there are complex relationships between federal/EU policy goals and how funds are spent on the ground, involving negotiation and multi-level governance. Though the funds are administered through relatively centralized structures for programming, monitoring and budgetary control, in practice the implementation – spending – occurs through a complex on the ground structure of multi-level governance involving, at a minimum, the Commission, Member States, and national and regional agencies, often through contractual arrangements for expenditures. Though both the USA and Europe carry out place-based policy through multi-level governance, the ways they do so are quite different, as we shall now see in the following sections.

4. Policies for Long-term Lagging Regions

There are long histories of policies for long-term lagging regions in both Europe and the USA. In the USA, national policy efforts toward historically lagging regions, began with the landmark Tennessee Valley Authority in the 1930s,[12] and were in extended to the seven regional development commissions beginning in the 1960s (eg. the Upper Great Lakes Commission, Appalachian Commission). There are also long-term efforts to stimulate lagging regions in Europe; as mentioned above, these overlapped with national-scale convergence schemes in the post-war period. Lagging region policies have two major components, both historically and presently, and in both the USA and Europe. First, those that emphasize general upgrading of infrastructure, education, and (more contemporaneously) government, i.e. general-purpose foundations of economic development. Second, those that attempt regional industrialization, with a focus on particular sectors. This latter category is relevant today for distressed region policies; regional tech-based industrialization policies; regionalization of "green" industry; and European regional innovation "smart specialization" policies, all of which will be discussed in subsequent sections.

Returning to the present, in Europe the 1988 reform of Cohesion Policy put in place a policy for less developed regions in a form which is recognizable today. Eligible regions were defined as those with less than 75% GDP per head, but there was flexibility to include other lagging regions. “Objective 1 regions” accounted for roughly 22% of the EU population. Eligible regions have been more rigorously defined as those having a level of GDP at PPP per head in the three years preceding the allocation decision of less than 75% of the EU average. This has generally covered 25%-30% of the EU total population. Within the category of less developed regions, resources are distributed mainly based on GDP per head and capped as a proportion of GNI to avoid absorption problems. Aid levels in these regions are generally 5-10 times higher than in others.

In practice, the policy towards lagging regions has operated in three distinct contexts. The first has been the convergence countries, where the national average GDP per head is significantly lower than the EU average. The focus here has been on basic infrastructure (ports, roads, rail, ICT, energy and the environment), human capital (youth unemployment, education, training), productive investment in firms. These are mainly delivered through national programs. A second group has been countries that have had one large lagging region – Italy and Germany. In the case of Southern Italy (Mezzogiorno), policy has tended to resemble that of Cohesion countries. In Eastern Germany, there was a stronger focus on upgrading infrastructure relevant for the business sector (ICT, energy) and training. The third group was small poor regions in rich Member States - Nord-Pas de Calais, Corsica in France, Merseyside, South Yorkshire, Highlands and Islands and Cornwall in the US, Hainaut in Belgium. These were not lagging in the traditional sense, but rather deindustrializing or peripheral.

Third, the enlargement in the 2000s to Central and South Eastern Europe further consolidated the role of Cohesion Policy in its focus on economic integration of lagging regions. In the mid-90s while Slovenia and The Czech Republic had GDP per capita (PPP) levels of around 60% of EU 15, Slovakia, Hungary, Poland, Romania and Bulgaria were closer to a third of EU levels. Outside more prosperous capital cities, income levels were far low and some regions were estimated to be at 15% of the EU average. The transition process of the 1990s had created many losers including rural, mono-industrial and eastern border regions (Bachtler et al., 2014). Much of the infrastructure was Soviet era, with a legacy of environmental damage, and businesses still carried the legacy of uneven privatization processes, poor integration into international markets, lack of access to modern managerial practices and technologies. Above all, there was a lack of administrative knowledge and capacity to implement EU policies and manage EU funds.[13],[14]

In the coming years, the EU’s policy for lagging regions will need to deal with further challenges. The potential accession of Ukraine, Moldova and the Western Balkans will imply the

integration of countries with significant regional disparities, ethnic divisions and disputed borders. In line with the evolution of economic governance within the European Union, it will have to play a bigger role in the delivery of reforms, it will need to support the EU's competitiveness agenda.

There is an evaluation literature that considers the general-purpose upgrading approaches of lagging region policies. For example, Kline and Moretti (2014) studied the long-term effects of the TVA and found that while agricultural employment gains were eventually reversed when subsidies ended, manufacturing employment continued to grow, boosting regional income due to higher wages in manufacturing. Their model suggests the TVA significantly increased national manufacturing productivity, with benefits outweighing costs, though agglomeration gains in the TVA region were offset by losses elsewhere. Isserman and Rephann (1995) found that Appalachia experienced faster growth in income, earnings, population, and per capita income compared to its control group. Morin and Partridge (2021), analyzing the Delta Regional Authority (DRA), found it contributed to income growth and lower unemployment but had no impact on poverty or migration. Pender and Reeder (2011) also noted that DRA counties saw faster growth in per capita income, net earnings, and transfer payments, with stronger impacts where DRA spending was higher. Neumark and Simpson (2014) highlight that infrastructure investments by programs like the TVA and the Appalachian Regional Commission generally produce more consistent positive outcomes by providing public goods.[15]

Todays' policy efforts can be seen in light of this history, when it comes to industrialization of lagging regions, reindustrialization, resilience, or cluster-building. Virtually all of these experiments in the past, and many current ones in Europe and the USA, are based in some way on the notion of generating regional "growth poles." Growth pole strategies date from the late 1940s. Economists drew on knowledge from reasonably successful wartime economic planning in many countries, where they believed that they had generated dynamic regional industry clusters that would be self-sustaining. They rooted their thinking in early input-output economics from Leontief (input-output) to Francois Perroux ("economic spaces") to development economists (Gunnar Myrdal, Albert Hirschman), drew the threads together of input-output systems that could be spatially planned and moved via policy in ways that would stimulate development (Perroux, 1950). Growth pole policies were attempted all over the world, and in Europe the best-known case is the Italian *Cassa per il Mezzogiorno*, with the most comprehensive policy that of the French national indicative planning agency that attempted a comprehensive reindustrialization program for the country, and integrated its regionalization (Cohen, 1969). Such policies became the fashion across the developing world, often intersecting with import-substitution industrialization. Interestingly enough, policy-practice rapidly applied and diffused what were the cutting-edge academic ideas about industrial organization and

development of that time. However, there were deep flaws and gaps in the academic models, leading to significant failures of those policies. Specifically, the models did not fully understand the difference between necessarily spatially concentrated "economic spaces" (input-output systems), and those that could be unbundled spatially. This is because their understanding of the transaction-cost basis of agglomeration economies was limited. Even in that era, with its much higher average transport-trade costs as compared to today, the anticipated "polarized circular and cumulative causation" did not occur, as policy stimulated what became spatially isolated plants or units. If anything, the contemporary development of agglomeration economics and trade cost models (New Economic Geography from 1989 onward) should reinforce our caution. Though we now understand the mechanisms of spatial polarization (sharing, matching, learning) much more precisely than back then, NEG models offer virtually no insights into precisely where a cluster originates and why it does in a specific place. They have no historical traction, and therefore cannot be used convincingly to construct policies that reverse-engineer cluster formation (Duranton, 2011). Trade cost economics has expanded our understanding of the many (endogenous) routes to spatially unbundled input-output systems. The implication is that it is extremely difficult to use policy to bootstrap up a dynamic regional development process from single units or plants that are caught up in such systems. And yet many policy declarations continue to claim the opposite. We will refer to this issue in our discussions of the use of growth-pole reasoning in distress policies (section 5); spatial innovation policy and green industrialization (section 6), and in the conclusion.

5. Policies for Distressed Regions

As noted in previous sections, growing and changing spatial inequality is not coextensive with economic distress, but frames a structural context in which such distress is likely to come about or be perpetuated. In both the EU and USA, distress takes many forms of appearance, but the principal one is deindustrializing formerly prosperous areas. In the USA, many such regions have suffered first from post-war relocation of industry to the South, and then from the globalization-China shocks of the 1980s until today, both accentuated by automation. In Europe, analogous types of regions exist, as in formerly prosperous deindustrialized regions such as northern France and Belgium, and northern England.

There are several obvious dimensions that can be used to distinguish distressed from non-distressed regions. Distressed regions have some combination of: net out migration, especially of the young and the skilled; and low per capita income; low employment or labor force participation.

Distress can best be detected over time, using panel data at the CZ-NUTS3-TTWA scale for these features. However, there remains no universal definition of methodology in practice, whether in the USA or Europe.[16]

In the USA, a recent example of capturing most of the core dimensions of distress in a rigorous way can be found in Connor et al., (2024). They use four variables (poverty rate; household income; UE rate; and college attainment), which are benchmarked to the economy as a whole. These are then measured with local areas (CZs, census places) as panels. Other major approaches exist in the literature, notably those of Bartik, or Austin et al (2018). The following provide a sense of their results:

Figure 12 shows US distressed places using the above methodology in, and Figure 13 with trajectories showing movement over time from 1980-2018 (Connor et al., 2024).

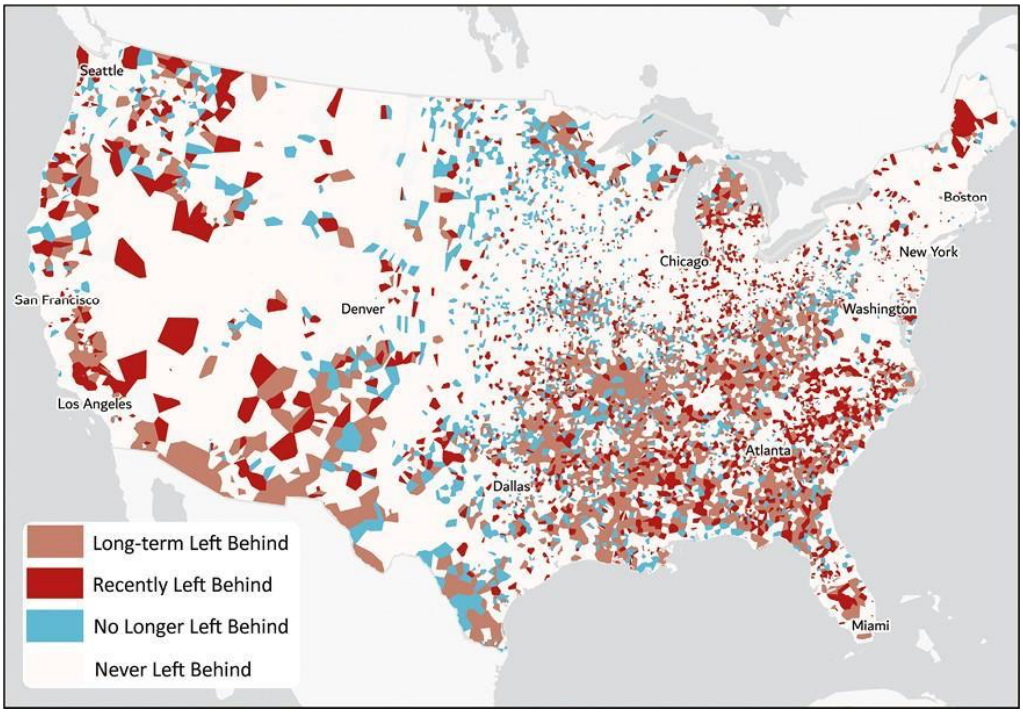


***Figure 12**: Distressed areas in the US (Source Connor et al., 2024).*

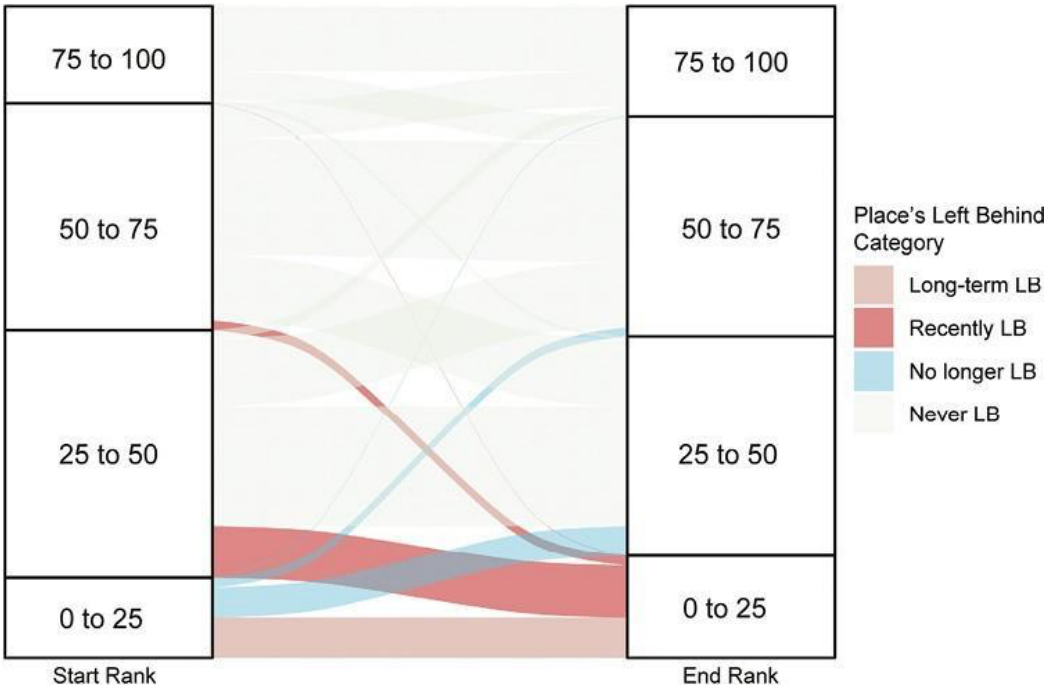


***Figure 13**: Distressed areas in the US over time (Source Connor et al., 2024).*

A solid methodology such as this one suggests that even a prosperous, growing economy such as the USA has significant regional distress; and that much of this distress is durable, with little improvement or exit from distress.

Against this conceptual background we can turn to European efforts to combat distress. With the introduction of the European Regional Development Fund in the 1970s, the EU acquired a regional policy instrument.[17] Reforms in 1988 and 1993 established policies for distressed areas. These policies were established with clear objectives and a high degree of geographical targeting covering 25% of the EU population in the 1990s. It covered industrial areas in decline (Objective 2), rural areas with structural difficulties (Objective 5b) and was accompanied by a range of sectoral initiatives aimed at specific areas. (Communities Initiatives). Objective 2 was established in 1988, following the significant reform of EU Structural Funds. The goal was to revitalize regions undergoing economic and social restructuring due to the decline of traditional industries, such as coal mining, steel production, and textiles. These regions faced rising unemployment, industrial obsolescence, and severe social challenges. It sought to encourage diversification into new sectors, such as services, technology, and innovation to address the negative effects of industrial decline, such as unemployment and poverty. It also supported the environmental decontamination and improvement of former brownfield sites to attract new investments.

Objective 5b was designed to address challenges such as depopulation and outmigration, particularly of younger population low productivity in agriculture, leading to income disparities and a lack of basic infrastructure and services. It sought to diversify the rural economy beyond agriculture by encouraging investment in other sectors, such as tourism, craft industries, and rural services as promoting environmental conservation and sustainable land use. It promoted local development strategies through bottom-up approaches, such as LEADER, a related Community Initiative focused on rural development (see Table 4, below).[18]

Objective Area	Region, Country	Description
Industrial Decline	Nord-Pas de Calais, France	An area once heavily reliant on coal mining and steel production, suffering from deindustrialization and unemployment.
	West Midlands, UK	A former manufacturing hub facing industrial restructuring and job losses due to the decline of traditional industries like car manufacturing.
Rural Decline	Ardennes, Belgium	A sparsely populated, rural area struggling with outmigration and an aging population, primarily dependent on declining agricultural activities.
	Western Ireland, Ireland	A region with low population density and limited economic opportunities outside of agriculture, facing significant demographic decline.
Urban Areas with Social and Economic Problems	Leipzig, Germany	An urban area with high unemployment, deteriorating housing, and social exclusion, particularly in the aftermath of German reunification and the collapse of traditional industries in East Germany.
	Marseille, France	Urban areas facing high unemployment, social exclusion, and crime, particularly in immigrant neighborhoods.
Fisheries-Dependent Areas	Galicia, Spain	A coastal region with heavy reliance on the fishing industry, affected by declining fish stocks and EU fisheries regulations, requiring economic diversification and job creation.
	Cornwall, UK	A region affected by the decline of traditional industries like fishing, seeking to diversify its economy through tourism and renewable energy projects.

***Table 4**: Examples of eligible Objective 2 and Objective 5b regions in the EU.*

In spite of the positive effects of geographically targeted distress policies in the 1990s and early 2000s, the European Union diluted its focus on such regions from 2007 onwards. This had a number of causes. First, the early 2000s were marked by the Lisbon Agenda, which set the ambition that the EU should become the world's most competitive economy by 2020 and brought pressure for Cohesion Policy to justify itself in terms of its contribution to this goal. In particular, the Sapir Report (2004) argued that in the context of increasing Europe's overall growth rate there was need to better align the EU budget with policies that would encourage a shift to a knowledge-based economy such as research and innovation (Berkowitz, 2021) . As a result, Cohesion policy underwent a process of "Lisbonization," with targets set for expenditure supporting competitiveness.[19] In the reform of the EU Cohesion Policy for the 2007-2013 programming period, the objectives were simplified into a convergence objective for lagging regions and a regional competitiveness and employment objective for all other regions. The issue of distress was thus partially subsumed within the larger goal of regional competitiveness and employment creation. We note that this priority has recently re-emerged in Europe, with the increasing innovation gap between Europe and the USA and China (section 9). It

presents a challenge in terms of allocation of policy effort and resources and embodies tensions between the geography of innovation and the geography of convergence.

In addition, though the issue of geographically concentrated distress between 2007 and 2016 remained largely absent as Member States concentrated on recovery from the economic and financial crisis, the Trump election and Brexit votes in 2016 triggered a renewed EU concern with so-called "left behind places" (Dijkstra et al. 2020). The European Commission had refrained from highlighting the negative consequences of globalization and had made little connection between international trade dynamics and the effects on industrial employment in the EU. In 2017, however, it adopted a Reflection Paper on "Harnessing Globalization" that painted a more sober picture.[20]

In the US significant attention is focused on place-based policies for those areas suffering from low employment (Austin et al., 2018). The justification for this focus is that joblessness – meaning both long-term low labor market participation and significant long-term unemployment – lead to major additional social and societal costs in terms of physical and mental health, crime, drug and alcohol dependency, family breakdown, lower educational attainment, increased welfare and disability benefit costs, and lower life satisfaction (Bartik, 2020a; McCann, 2023a). In this sense the US is different from many parts of the EU, in that health insurance depends on having a job. Thus, while involuntary unemployment, low labor participation (Weingarden, 2017) and joblessness (Bartik, 2020b) are serious societal challenges in all countries, they are especially acute in the USA, because of the allied healthcare benefits of employment (McCann, 2023b). Comparing the magnitude of resources each of these receives, in the EU there is a greater focus on economic incentives, such as tax breaks, rather than comprehensive, multi-faceted development strategies. These tax breaks are often managed with loose guardrails or conditionalities, including stipulations such as "first-source hiring agreements" (Bartik, 2020c). Under the Biden Administration many of the place-based policies for distressed areas have moved towards supporting tradable industries, as Bartik (2020a) states is important.

The evidence on US place-based policies for distressed areas is mixed. For enterprise zones, Kolko and Neumark (2010) found little to no significant employment effects in California, with wide variation in results. In contrast, Freedman (2013) observed modest employment growth in Texas, particularly in low-wage sectors like construction and retail. More comprehensive studies, like Ham et al. (2011), reported positive outcomes in federal Empowerment Zones, with reductions in unemployment and poverty, though spillover effects were limited. Reynolds and Rohlin (2015) found that Empowerment Zones primarily benefited higher-income households, with little improvement for the poorest residents. Neumark and Simpson (2014) and Bartik (2020a) highlight issues such as poor

targeting and displacement effects, where benefits intended for one area merely shift economic activity from nearby regions. Their review of discretionary grants also shows varied outcomes, depending on precise targeting and the inclusion of additional support measures such as workforce training.

Finally, Europe has a specific type of distress that is not widely present in the USA. Many European middle-income regions (regions with a GDP per head between 75% and 100% of the EU average), particularly in more developed Member States, seem stuck in a 'development trap.' Examining them as panels between 2001 and 2019, whether benchmarked to their Member State national economy or to Europe as a whole, their growth of GDP per head was well below average, and most exhibited productivity growth and employment creation below the European average (European Commission, 2022). In Europe, there are even some high-income regions that are in long-term slow-growth or no-growth. The US is a contrast to this, in that the distressed regions in Connor et al., (2024) are overwhelmingly low-income with high levels of social and household distress. Slow-growth at high or medium-income levels, with strong welfare state support, may not correspond to the traditional image of distress, but in the European long-term context of growth and innovation deficits and weak demography, there is a worry that such conditions will begin to transform into social and household distress and that there will be insufficient counter-cyclical investment to prevent such negative spirals. The Commission has only recently become aware of the extent of development traps in the EU. The next cycle of Cohesion Policy (2028 onward) will likely take it into account.

6. Stimulating contemporary high-income prosperity: regional innovation policies: clusters, tech-based manufacturing

The geographies of high-technology and innovation have some important differences between the EU and the USA. The innovation economy is smaller in the EU, if we define it as comprising economically valuable innovations and the formation and capitalization of firms in the tech sector, broadly defined. Differences in the geography of innovation broadly mirror differences in the geography of urbanization: the USA tech sector is more concentrated in a smaller number of larger tech centers that are more specialized than their European counterparts; the differential performance of the EU innovation sector may be related to such geographical differences in matching of resources, as well as wider institutional and financial differences (Crescenzi et al., 2007).

In addition, in the policy world (and to some extent in the academic literature) there is frequent semantic and conceptual confusion about innovation or tech-based development. On the one hand, we can think of the "innovation" sector as the firms and people that generate important innovations. A good, stylized fact about them is that they are spatially clustered; consist of complex organizational ecologies, including long-distance partners that interact with core clusters; that they concentrate high skill and high wage employment in major metropolitan areas, and a few smaller places mostly dominated by major universities. Such clusters are found in numerous metropolitan regions around the world.

On the other hand, high-tech manufacturing is mostly a part of the mass production segments of technology industries, dominated by large firms and their production units, often located in far-flung locations in spatially dispersed commodity chains. The spillovers and other economic development effects of the two sub- sectors are quite different, conforming to a division between non-routine/skilled activities, and routinized large-scale production systems and market-serving locations.

There are then two very different buckets of policies: on one hand, those seeking to stimulate clusters, start-ups, patenting and a whole host of so-called tech or science based development processes; and on the other, new versions of policies to stimulate (mostly) manufacturing or mass services delivery, where the manufacturing or services are for Third Industrial Revolution sectors rather than those of the mechanical age. They then get commonly labeled as "innovation" or "high tech policy" but this is quite confusing. To illustrate the confusion, the theoretical rationales for the two types of innovation-led economic development policy are entirely different. For clusters of basic innovators/first mover commercialization, agglomeration theory is deployed to argue that policy interventions can generate positive externalities, both locally and for the economy as a whole, with geographical concentration/specialization increasing either productivity generally or innovation productivity in particular. As Duranton (2011) points out, because the three key recognized features of agglomeration – sharing, matching and learning – interact and have two-way causality. This makes them difficult to reproduce via policy, and there has been much policy failure in the past few decades. On the other hand, as Duranton and Venables (2018) suggest, these features of clusters are collective action phenomena. As such, they may over concentrate and not achieve an optimal spatial equilibrium allocation across regions. Policy may be necessary to break the collective action logjam. But paradoxically, policy has seemed to be rather poor at understanding exactly what it should do to successfully re-allocate sharing, matching and learning toward an alternative distribution. And somewhat in contrast to this view, the "new agglomeration" literature (e.g. Delgado et al., 2016)

establishes that the nature of agglomerations in leading tech-oriented industries today may be more cross-sectoral than the agglomerations of the mechanical age. In this case, they require more scale, and the opportunities to achieve a more distributed equilibrium may be limited compared to the past. This is more a problem for Europe, with its more fragmented and redundant clusters and its large number of middle-sized metro areas than the USA.

As background, it should be remembered that there is long policy experience with trying to spread out whatever are considered to be the key "technology" or "leading edge" sectors of the day. As the manufacturing/mechanical age matured in the second half of the 20th century, many countries established policies to spread out manufacturing, which was then seen as the key to local prosperity. These were the "growth poles" discussed above in Section 4. As we noted, the assumption behind failure of many such failed experiments, was an ecological fallacy, consisting of the notion that locating a key part of a supply chain would necessarily require or incentivize spatial proximity in the rest of the supply chain and lead to dynamic clustered local economic development. Instead, with declining long-distance transport costs, many such plants became stand-alone "cathedrals in the desert."[21] That risk is omnipresent today.

6.1 EU regional innovation policies: making more places more innovative? Or making Europe more innovative through innovation-compatible geographies? Or tracing out an alternative European geography of innovation?

Unlike the US, where the debate has focused on using the resources available under industrial policies to address territorial goals (Perilla and Muro, 2022), in the European Union the approach has been the opposite: how place-based innovation policies can contribute to making Europe more innovative. In this sense, they are delivery mechanisms for industrial policies. In Europe, the commitment to a rules based open trading system, strong competition and state aid rules, and a preference for national champions in those Member States supportive of a more active industrial policy, has meant that the EU in the last decades has not developed strong industrial policy instruments.

In the US, place-based policy for innovation/clusters has been closely associated with the turn towards active industrial policy. The Biden Administration has turned towards increased industrial policy, through the American Rescue Plan, the Infrastructure Investment and Jobs Act, the CHIPS and Science Act, and the Inflation Reduction Act, collectively amounting to approximately $3.8 trillion in spending.[22] Out of the $3.8 trillion allocated through recent Biden administration acts, approximately

$80 billion to $100 billion is dedicated to place-based initiatives (Muro et al., 2022; Gansauer, 2024). A substantial portion of this - around $70 billion (conservative estimate) - is specifically targeted towards fostering innovation and high-technology clusters, which is significantly more than the amount allocated purely based on economic distress. These policies are justified by goals related to national growth and supply chain security, with the understanding that effectively reshoring production requires a parallel effort to reshore innovation.[23]

Unlike the US where the debate has focused on using the resources available under industrial policies to address territorial goals (Perilla and Muro, 2022), in the European Union the approach has been the opposite: how place-based innovation policies can contribute to industrial (sectoral) objectives. In Europe, the commitment to a rules-based open trading system, strong competition and state aid rules, and a preference for national champions in those Member States supportive of a more active industrial policy, has meant that the EU in the last decades has not developed strong industrial policy instruments.[24] [25]

To the extent that there is interaction between industrial policies and regional policies, this comes through cohesion policy's long support for some research and development activities mainly in the form of research infrastructure and science parks, as well as innovation grants to SMEs. But this approach has been criticized from several angles. Too much funding had been allocated to overlapping projects or to priorities where regions lacked relative strengths. Regions were therefore instructed to redirect funding to focus on relative strengths where they could, in principle, become excellent (European Commission, 2010). A similar discussion occurred in the academic debate on how to give a push to innovation in a manner that was place-based rather than top-down. In 2009, Foray, David, and Hall proposed that this focus could be achieved through an entrepreneurial process of discovery, a learning process to reveal the research and innovation domains in which a region can hope to excel. The role of government would be to supply incentives to encourage public, private, and knowledge actors in regions to become involved in the discovery of the regions' respective specializations and to identify complementary investments both within and outside the region, to link leading and lagging regions (Foray et al., 2009). These ideas found expression in the notion of 'related variety' (Frenken et al., 2007) which posits that a regional economy diversifies into products or technologies that are closely related to the stock of existing activities, generating a set of potential paths that could be the basis for the facilitate development of new – but technologically-related industries and technologies (Boschma and Iammarino, 2009; Aarstad et al., 2016; Lengyel, and Szakálnékanó, 2013). A key "realist" argument in favor of this gradualist approach is that major regional technological jumps to new, unrelated technologies are almost impossible to achieve. It is

also linked to the European idea that many regions outside the innovation core can become a participant in a world-class continental innovation economy, where there are many middle-sized centers of excellence, hence reconciling excellence with convergence. Taken together, these ideas capture widespread adherence to the idea that there is a possibly different spatial equilibrium pathway from that of the USA to a more innovative Europe - that efforts to strengthen in strongest and most competitive regions through research excellence programs such as Horizon Europe could be accompanied by efforts to foster innovation in middle income and less developed regions. And this thinking has been key to spatial innovation policy, through the notion of "smart specialization," which would create a more diffused innovation geography than that of America, more sharing out of innovation. Smart specialization strategies were also seen as a way of increasing the targeting of spending on innovation and achieving the Europe 2020 objectives (European Commission, 2010).

Smart specialization brought together several different ideas: a regional innovation systems approach that argued for place specific approaches, based on this discovery process that would gradually transform what regions do. This stood in opposition to the traditional strong science led approach that predominated in Cohesion Policy in early years (Foray et al, McCann et al 2015) In the academic debate, it became increasingly associated with gradualist evolutionary thinking with regional industrial change seen as a branching process, particularly in regions with a high degree of "related variety," meaning presence in a number close-in industrial classifications or patent classes. (Frenken et al 2007, Foray 2014).

The approach is subject to a number of critiques of its empirical methodology (Hassink et al 2009). Other authors have critiques it conceptually, pointing out \that its underlying assumptions rely on a set of assumptions about innovation gradualism; technological relatedness; and dispersed spatial underpinnings of innovation that have only limited evidentiary support (Bathelt and Storper, 2023). In particular, it can be questioned whether the smart specialization approach in Europe has become a de facto way for Europe to avoid the question of why it is so far behind the USA (and perhaps now China) in disruptive, first-mover innovations, as evidenced by the fact that none of the key firms of the Third Industrial Revolution can be found in Europe (see Section 9 for additional discussion of this). An associated question is whether even the most innovative European regions are essentially second-mover innovation systems, refining and extending disruptive innovations that have been commercialized mostly in the USA.

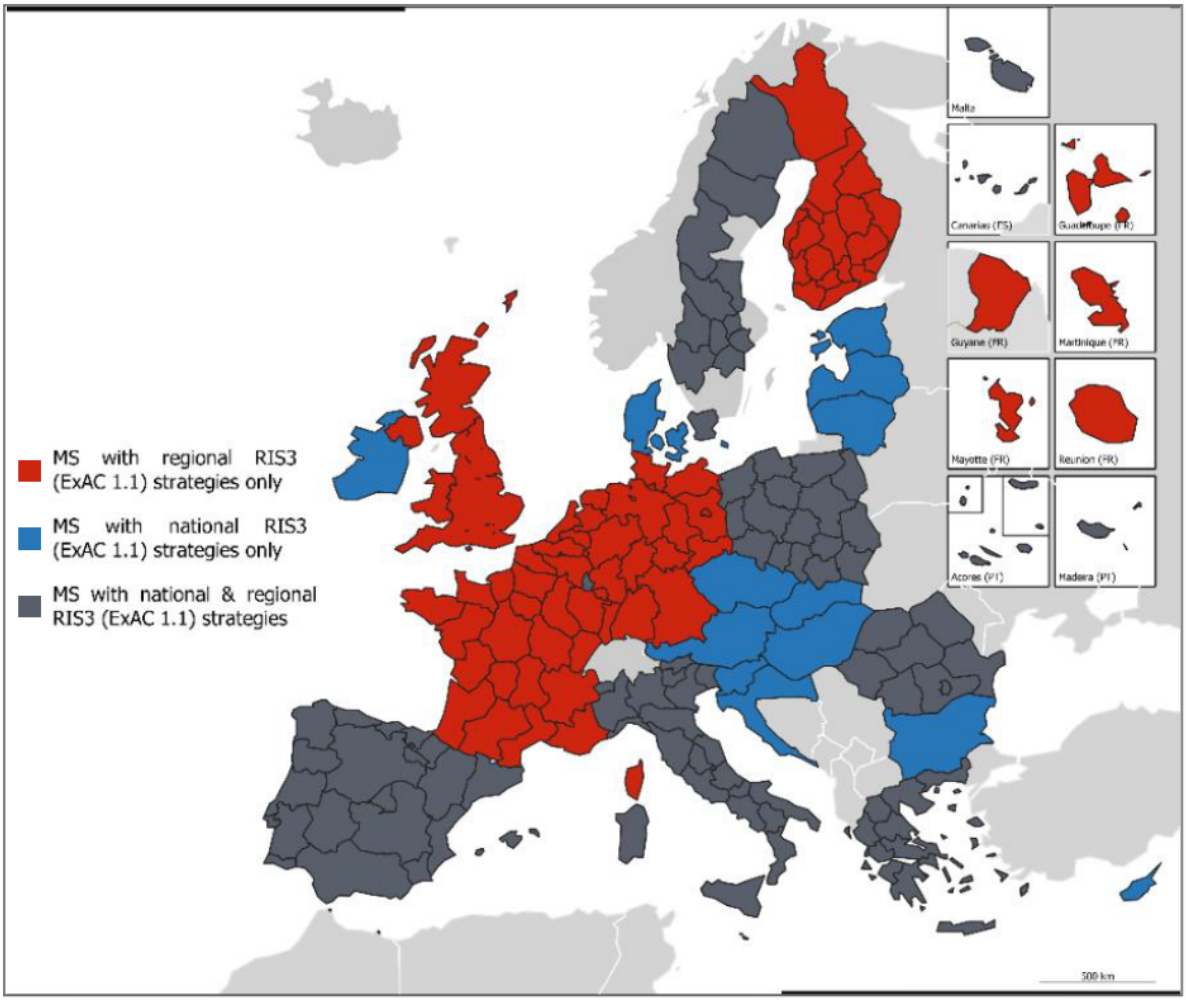
In any case, implementation of smart specialization strategy has been applied as a "conditionality" applied to research and innovation investments under cohesion policy in the 2014-2020 period. This meant that before a program was adopted a national or regional smart specialization

strategy had to be adopted that concentrated on a limited set of research and innovation priorities. Over 180 smart specialization strategies have been developed, at regional and national level (Figure 14). Part of their number can be attributed to their obligatory nature, but they also reflected a significant demand as well for more place-based policies for innovation at regional and local level (Committee of the Regions, 2018). Throughout this period more than EUR 40 billion was allocated to regions through the European Regional Development Fund that will fund these priorities.

A few real world examples of successful resilient old deindustrializing regions, e.g. Rochester, NY in the USA, where many of the scientists and engineers from legacy firms in the optics industry stayed when those firms closed, and turned their talents to start-ups (Haller, forthcoming). In Europe, there appear to be some cases including Tampere, Eindhoven, Brest and Ruhrgebiet, Limburg or Bilbao. They have developed clusters in sectors such as green technologies, advanced manufacturing, chemicals, life-sciences and agrifood.[26] In most cases, these regions were able to successfully adopt smart specialization and have become strong proponents for the approach. However, they were all regions with strong pre-existing innovation systems.

Turning to evaluation, despite the large corpus of literature promoting and shaping smart specialization in Europe, there has been little rigorous evaluation of its economic and innovation effects (Rodriguez and Demmler, 2023, Janik et al., 2020). Smart specialization has encountered considerable mismatch between goals on paper and innovation effects.[27],[28] The focus of the second generation of programs therefore moved away from the strategy itself to a range of more substantive issues identified as bottlenecks to effective regional innovation programs. These included identifying challenges for innovation diffusion and digitalization, defining the bodies responsible for the management of the smart specialization strategy, better monitoring and evaluation, developing the ecosystem of different actors, focusing on issues of diversification in declining industrial sectors, or cooperation with actors outside the region (EC 2021a). In this respect, the focus has moved away from affecting the overall direction of European innovation, towards achieving what is considered to be a functioning regional innovation ecosystem.

In spite of this history, there are some recent attempt to reframe smart specialization policies to support the transition from the mechanical age to the Third Industrial Revolution and the green transition. This circles Europe back to using regional policy as a way to achieve industrial policy. But the risk of gradualism and remaining in legacy sectors and technologies is obvious, since if regions are burdened by legacy industries, many of the new industrial strategy goals may not emerge as related outgrowths of existing activities.[29]



Source: Prognos / CSIL (2021). Note: the map refers to the latest available strategies

***Figure 14**: Smart Specialization Innovation Strategies in the EU: coverage of smart specialization strategies (Source: European Commission).*

The gradualist ideas in the European policy and academic environments in the area of place based policies stand in sharp contrast to the American experience of radical changes in the geography of innovation, with America's strength in first-mover innovations, fast scaling-up commercialization, and pioneering first-mover regions. It is linked to the higher level of technological and sectoral specialization of American regions as compared to European ones. Unlike the US, the EU is confronted with a deep-seated problem in turning science excellence into close-to market innovation: the commercialization gap, especially as compared to America.

Experience of regional innovation policies in Europe, suggest that there remain significant weaknesses in comparison with the US and the rapid progress of China. The EU has numerous innovation clusters, but they are less developed and generate less value than those in the US and China (Draghi 2024). Innovation in Europe remains firmly grounded in mid-tech and legacy, like automobiles. Such sectors do not have the same R&D intensity as high-tech businesses. This explains in large part the significant difference between US and EU levels of business R&D (Fuest et al., 2024). In addition, although Europe has developed a strong research ecosystem with strong cross-border linkages and competition for resources through European programs, innovation activities remain highly fragmented, and technology diffusion remains strongly national.[30]

In light of the present discussion, a deeper question is whether even the newer versions of smart specialization thinking – with its built-in assumptions of gradualism and relatedness, and spatially dispersed innovation – combined with more active industrial policies, better financing opportunities and stronger European policies for research and innovation excellence (currently a budget of close to EUR 100bn can achieve what is necessary for Europe to get out of its first-mover innovation and commercialization deficit as compared to the USA. [31]

Returning to the second type of tech-oriented spatial policy, -- i.e. tech-oriented reindustrialization policy – it appears that many may be a contemporary relabeling of past efforts to bootstrap local development via growth-pole investments. In the few cases where success was obtained it seems to have stemmed from placing such major jump-start investments in a wider context of regional institutional reform for better local government; fighting corruption; modernizing the local labor market; increasing education and retaining the young; encouraging related local skilled entrepreneurship; developing R&D; increasing local capacity for appropriating knowledge from afar. This is a long list of requirements, a "narrow corridor" that avoids cathedrals in the desert. But in the USA the cases of central Florida; Phoenix; and South Carolina may have succeeded in this way.

6.2 Regionalized green technology industrial policies

Europe is currently concerned to stimulate cluster formation and regional development through environmental and climate-solution innovation. The European Green Deal approved in 2020 commits Europe to become a climate neutral economy by 2050, including a 55% reduction in emissions by 2030. It includes initiatives to save energy, diversify energy supplies and produce clean energy (RePowerEU), a green industrial plan in 2023 promoting net-zero industrial capacity, a critical raw materials act to ensure sufficient access to these resources and a reform of electricity market

design. In the USA, the Inflation Reduction Act has a declared goal of stimulating the innovation and production of a wide array of green technologies throughout the US economy, with language referring to “good jobs in lagging regions” (EPA, 2023). The announced measures include :Regional technology and innovation hubs; Regional clean hydrogen hubs; Regional clean direct air capture hubs; Clean energy demonstration program on current and former mine land; and the Regional clean energy innovation program. The IRA includes almost $370bn of investment in disadvantaged communities, aimed at the prioritization of projects that both repurpose retired fossil fuel infrastructures across the USA while also helping the re-employment and enhancement of employment for locally displaced workers (Barbanell, 2022).[32]

7. Place based policies for the energy and climate transitions

The challenges of climate change and the energy transition in the USA and the EU are both similar and different. Europe has high energy costs compared to the USA. Both continents are challenged to reduce fossil-based emissions, but also to keep energy costs low enough to continue to attract and keep energy-hungry activities such as manufacturing, AI and data centers. The US is energy-abundant, voracious in consumption, and has a settlement pattern based on land-abundance and hence is emissions and energy intensive. From an EU perspective, if the US can keep its energy prices down in a world of increasing strategic competition, it will have a comparative advantage in these activities relative to Europe. On the other hand, Europe’s lack of cheap energy may generate an incentive to innovate that will be to its advantage in the long run, if such innovations lead to not just to decarbonization, but to economically competitive decarbonized energy. However, there is an inter-temporal challenge to Europe in attempting such strategies. The energy and energy-price effects are rather far in the future, as are the possible benefits of innovations that can be commercialized around the world.

In both Europe and the USA, settlements are threatened and challenged by climate change, and this will require place-based policy to make such settlements resilient. Europe’s settlements are denser than those of the USA, by orders of magnitude, again offering some differences in potential effects and solutions.[33] In the USA, while there is a great deal of talk in urban planning circles about the need to increase “transit-oriented dense” (ToD) settlements, the reality is that most new urban expansion and housing construction occurs in very low density settlement patterns. That having been noted, in both Europe and America, there are emerging policies intended to harden the built

environments but also to widen ecological services in settlements, a “soft” approach to climate resilience that complements the hardening of infrastructures.

The US has been the leader in regulatory policies for environmental quality since the late 1960s, beginning with the landmark 1969 National Environmental Policy Act, and continuing through the Clean Air Act, Clean Water Act, Toxic Substances Control Act, and a host of other comprehensive national laws that set standards for environmental quality. NEPA required comprehensive environmental assessments of major federal actions; many states copied this with laws requiring impact assessments of most significant private sector activity (eg CEQA in California). There are also laws for marine mammal protection, coastal zone regulation, and endangered species protection.

EU policy has operated within the context of comprehensive environmental regulatory frameworks since the early 1970s across a broad range of areas including waste, water, biodiversity soil and climate. Environmental legislation was an important part of establishing a level playing field in the single market and the 1980s and 1990s were a high point in terms of ambition. In the late 1990s and early 2000s the EU sought to assume leadership in international environmental and climate diplomacy following the US withdrawal from the Kyoto Protocol (Burns et al, 2020). These two dynamics resulted in a rich framework of binding targets, EU level regulation (through directives), extensive monitoring by the European Environment Agency and increasingly supported through the EU budget. The European Union has had legislation on Environmental Impact Assessments since 1985 and sets requirements for a broad range of investments such as motorways, chemical works, bridges, power stations, factories etc.

There are similarities between the USA and Europe in implementation of environmental reviews and goals. In the USA, a federal agency (eg. the Environmental Protection Agency or the Interior Department) issues detailed standards and implementation regulations, for both “point source” emission or impact regulation; and then region-wide goals for achieved quality are achieved through conformity of individual projects/actions and some kind of place-based integration strategy. The Clean Air Act, for example, devolves supervision to the nine federal regions, which in turn supervise the states in their area, who must in turn require their non-conforming regions to propose regional air quality control plans in a several-year cycle. There is much back and forth in these plans, usually leading to something resembling a contractual agreement between the region, the state and the federal office of the national agency in charge of implementing the law. The USA has been broadly successful in improving environmental quality: the 1970 Clean Air Act is estimated to have reduced overall air pollution by 66.9%, and thousands of miles of waterways that were severely polluted are now clean. [34] In addition, the relationship between laws and implementation rules is subject to

expansion and contraction by the courts in the USA. [35] There are broad similarities to environmental quality regulation in Europe, though this is a domain that is not the sole prerogative of the EU, but also falls significantly under Member State law and policy.

In both Europe and the USA, there is a significant issue around assignment of costs of environmental and energy transitions in relationship to the geography of benefits; and this occurs in a complex setting of spillovers of benefits, or whether the problem is a common pool one or not.

Environmental investment has traditionally been an important area for Cohesion Policy and EU enlargement brought with it significant environmental investment needs in countries with low environmental quality from the Soviet era and with a low starting point. The fundamental EU community rights to environmental quality had to be transposed in national legislation, and accompanied by changes in national environmental policies, the strengthening of administrative capacity, consultation and monitoring requirements, in addition to private and public investment (ten Brink 2002) .[36]

As part of the integration of environmental and climate objectives in cohesion policy, in the 2014-2020 period, at least 20% of the EU budget has been directed to climate goals and is slated to rise to 30% for the 2021-2027 period. Within Cohesion Policy this has taken the form of earmarking of expenditure for environmental and climate expenditure. For example, programs must allocate at least 30% of expenditure to these objectives before they are adopted and failure to achieve these targets will lead to a reduction of resources. To implement this mechanism, a highly developed monitoring system based on commonly defined indicators has been put in place. Beyond this, respect of environmental laws is a condition for selection and payment of projects. EU support can be withdrawn for expenditure on projects which do not meet these requirements. Finally, effective transposition and implementation of key EU legislation in areas such as EIA, waste and water management have been set as conditionalities for payment to Member States for investments in these areas.[37] To our knowledge, the US does not have this kind of budget appropriation mechanism, but instead, environmental agency and program budgets are established in each federal budget. In practice, though highly politicized (in the courts, and through industry contestation in Congress), the major programs have substantial continuity over time because many states and regions are invested in them.

In both the EU and the USA, there will be significant and unevenly distributed social and economic costs of transitioning to new energy sources. In both, job losses in the coal industry and its regions, has been an important political issue. In Europe, as part of the Green Deal, two new funds were set up to deal with such costs: a Just Transition Fund and a Social Climate Fund (SCF).

The Just Transition Fund (JTF) with a budget of almost EUR 20 billion will run from 2021 -2027 and is one the pillars of the Just Transition Mechanism which also includes support from the European Investment Bank. Its main objective is to alleviate the negative social, economic, environmental, demographic and health impacts of the climate transition in the most affected territories (Map 6), by helping to diversify local economies and to reskill and upskill workers and jobseekers. The resources were targeted on the areas most affected by the impact of the restructuring of fossil fuel and energy intensive sectors.

The SCF was created alongside the second phase of the European Emissions Trading Scheme (ETS2), which will include emissions from fuel combustion in buildings, road transport and additional sectors. It will be funded out of revenues from the ETS. The fund is intended to provide EU Member States with dedicated funding to address the needs of the most affected vulnerable groups, such as households and individuals penalized by energy or transport. The SCF will support structural measures and investments in energy efficiency and renovation of buildings, clean heating and cooling and integration of renewable energy, as well as in zero- and low-emission mobility solutions. Member States also have the option of spending part of the resources on temporary direct income support. The SCF will enter into force in 2025.

Hanson (2023) draws a parallel between the energy transition and the decline in US manufacturing in the past decades. Job loss from automation, globalization, and competition from China had significant, long-lasting impacts on regions specializing in manufacturing, with widespread unemployment, wage suppression, and increased poverty (Autor et al., 2013, 2014). Similarly, regions dependent on coal and fossil fuels may experience deep, prolonged economic challenges (Black et al., 2005; Charles et al., 2019; Acemoglu and Restrepo, 2020).

In the US over recent years there have been several minor place-based funds and programs which have been targeted in some way at mitigating the impact of climate change and the transition away from a fossil fuel economy. For example, starting in 2014 small place-based funds have been developed to provide assistance to coal mining communities impacted by plant closures - job losses have been significantly clustered in Central Appalachia, with downward spirals seen in local government tax revenues (Morris et al. 2020).[38] The Biden Administration, as part of their core mission to tackle the climate crisis, has significantly developed the range and scope of place-based policies aimed at supporting climate justice and assisting communities impacted by pollution, climate change, or the shift away from fossil fuels. The three most important developments are the Infrastructure Investment and Jobs Act, the Inflation Reduction Act,[39] and the Justice40 Executive Order (Muro et al., 2022).[40]

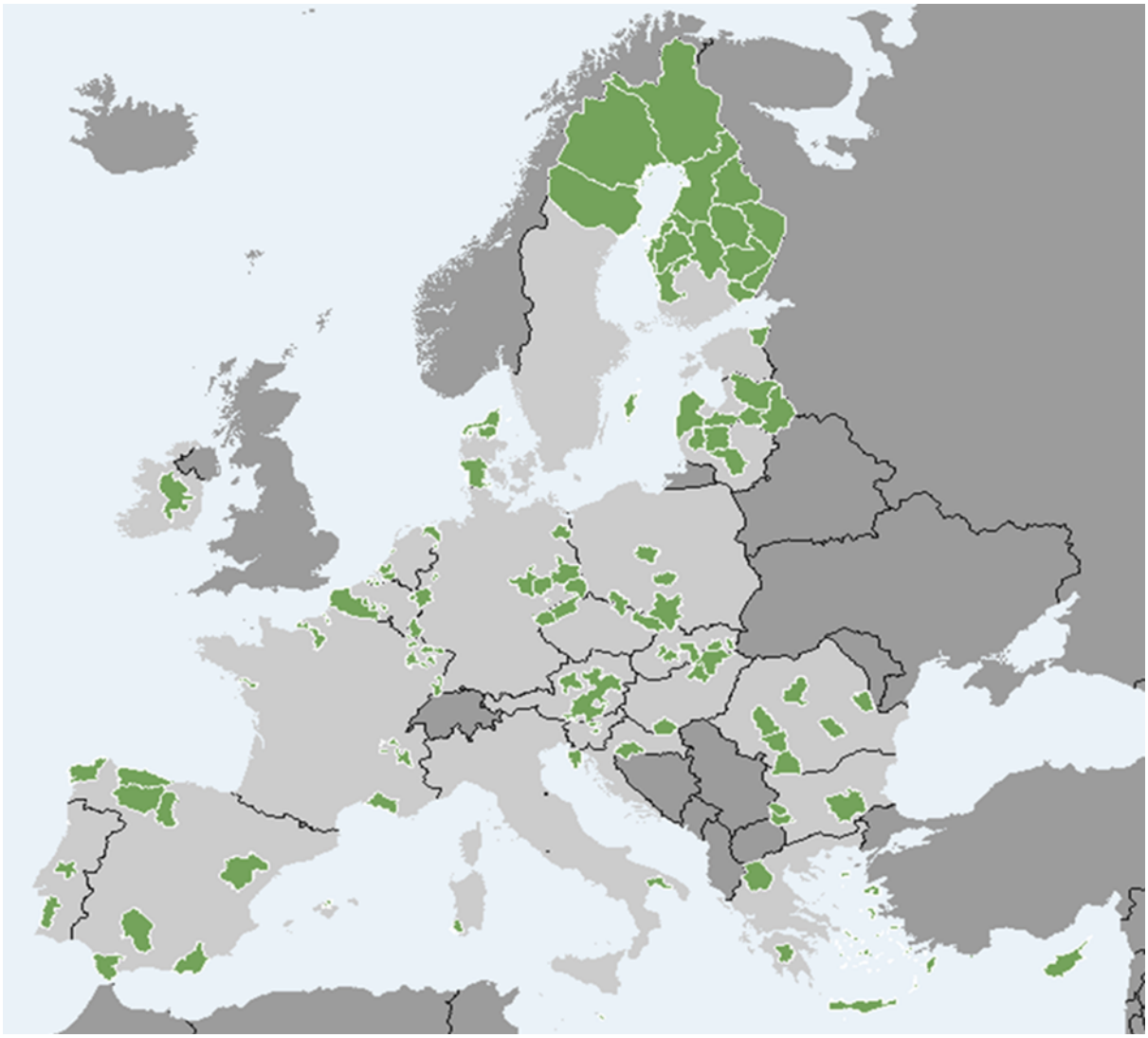


***Figure 15**: Territories eligible for JTF support (Source: European Commission).*

In comparison to Europe, the USA has a significant weakness in spatial targeting of these programs. Rami et al., (2024) evaluate the coverage and targeting of the above four programs. Although they represent just a portion of federal place-based initiatives, they collectively cover 79% of the US land mass, 64% of the US population, and 57% of the national income. Manhattan's Times Square qualifies as a 'disadvantaged community' under Justice40 and the Environmental and Climate Justice Program due to several factors, including a lack of green space and high housing costs. Most of Orange County, California (LA metro) qualifies as an 'energy community', as do San Francisco, San Diego, and Chicago, although most of West Texas, home to the nation's largest oil field, does not. And the unemployment rate in West Texas is below last year's national average). Much of Ann Arbor,

Michigan, and Berkeley, California - affluent cities with a large college-age population - qualify as low-income communities due to low-income levels, likely because most students earn little or no income (Rami et al., 2024).[41] This problem is less severe than in Europe; but Europe's proliferation of programs in other areas means that targeting and coverage can be found in the haystack of objectives to direct money to many and sundry kinds of regions there.

8. Comparison of place-based policy design and implementation in EU and USA

In contrast to the United States, the objective of balanced spatial development has had a high profile in declared public policy goals in Europe. The Treaty of Rome set the goal of ensuring the harmonious development of European Communities' economy by "reducing the differences existing between the various regions and the backwardness of the less favored regions" (European Communities, 1957). Of twenty-seven Member States ten have references to spatial rebalancing, regional development or territorial fiscal equalization in their constitutions. All have national legal frameworks to achieve a mix of these objectives. The architecture of Cohesion Policy is built around a general regulation that sets out the main objectives, budget, implementation, monitoring and evaluation requirements and fund regulations that set out the detailed scope of activities to be undertaken.

8.1 People versus place targets and narratives in policy construction: US-Europe differences

In the US, many policies aimed at distressed areas fall under what Ladd (1994) or Neumark and Simpson (2014) refer to as "place-based people strategies." These policies target specific geographic areas but are designed to benefit disadvantaged residents, such as enterprise zones that aim to create jobs where job prospects for low-income individuals are weak. In contrast, some place-based policies focus on areas regardless of the socioeconomic status of residents, like downtown revitalization or strengthening industrial clusters. "Place-based people strategies" also differ from other "people-based" policies, which focus on helping disadvantaged individuals without concern for their location. Place-based policies that target people can be classified as either direct or indirect. Direct strategies focus on boosting economic activity and strengthening labor markets in areas where disadvantaged people live, while indirect strategies aim to improve access to stronger labor markets, such as through the Moving to Opportunity program or infrastructure projects addressing spatial mismatch. However, more attention is typically given to direct strategies (Neumark and Simpson, 2014).

Rivlin (2018) argues that these are not in reality about place-based policies, but rather individual-based or people-based policies that vary with location. Rivlin (2018) argues that a true place-based policy would need to consider the reasons why the place is in trouble and what can be done about it, and where localities face deep structural challenges, the subsidizing of work alone will not address the problems. In this view, genuine place-based policies are much more holistic than simply the application of local unemployment insurance and should be based on treating multiple interacting causes of the local economic weaknesses, where the interactions are place-based. This echoes the conceptual framework of cumulative spatial disadvantage developed in Robert Sampson's urban sociology (Sampson, 2018).

It appears that both the US and Europe have moved steadily toward more integrated approaches at area scale. In some cases, this involves area-based plans to treat several problems at once. In many cases, however, it involves multi-level implementation strategies for a single program or goal; and in still others, combinations of the two. At least in terms of narrative legitimacy, the scale of "place" is less contested and more central in Europe as compared to US policy and academic circles. This does not imply, however, that such integration is fully successful; a number of problems related to its sheer complexity and hydra-headed nature are signaled below.

8.2 Policy authority and implementation: comprehensive versus issue-based

There is a sharp contrast in policy governance between the USA and Europe. Cohesion policy is characterized by a highly rules-based model of governance, which ensures a common set of procedures across the different Member States and regions. Its legal framework is the result of a set of negotiations between the Commission, the European Parliament and the Council of Ministers representing the Member states. Although the European Parliament's role has been reinforced in recent years, it remains a strongly intergovernmental process due to the close links with budgetary negotiation of the Multiannual Financial Framework. Cohesion Policy is a shared competence in the EU Treaties, meaning that both the EU level and Member States can legislate and adopt binding acts in this area.[42]

Cohesion policy is strongly integrated with other EU policies both in goal setting and implementation. As traditionally the largest source of funding for a broad range of objectives, it has been seen as supporting the delivery of key European policy objectives under the heading of "Synergies". Indeed, in areas of environment, transport and research it has become the key source in implementation of these policies. However, cohesion policy is implemented through integrated

programming, where measures are designed to support complementary investment types based on the specific needs of the programming area remains the heart of the design and negotiation of programs between Member States, regions and the Commission.[43] This involves the development of an integrated strategy in local areas, intended to respond to identified intersecting local challenges, with the relevant territorial authorities responsible for the strategy and involved in managing it, often with a delegation of the program's management responsibilities from EU to locality.[44] In 2014-2020 total investment of more than EUR 38 billion has been supported through these territorial delivery mechanisms.[45] From 2014 onwards, the objectives of the policy and the organization of the programs have been aligned with the main strategies of the EU. This has created tensions as some regions consider that this does not leave them enough freedom to pursue tailored economic development strategies.[46]

As Cohesion Policy represents close to a third of the EU budget, it is an essential part of redistribution between Member States in negotiation of the Multiannual Financial Framework every 7 years. On the revenue side, the EU budget is largely financed through the so-called “national contributions” which are based on Gross National Income (GNI). As a result, the more developed EU economies contribute relatively more to the EU budget, and hence to the financing of Cohesion Policy, than the less developed ones and less developed Member States and regions of the Union receive more from Cohesion Policy (Figure 16). The place-based nature is therefore directly reflected by the balance between the contribution of the Member States to Cohesion Policy and Cohesion Policy expenditure. To some extent, the redistribution from one set of Member States to another within cohesion policy is compensated by other programs, notably the common agricultural policy, which directs funds back to the higher-income member states in Europe and is subject to scrutiny under the principle of “juste retour.” No such overall compensation mechanism exists in the USA, where there are large gaps in contributions to and receipts from the federal budget, leading to ongoing political tensions.

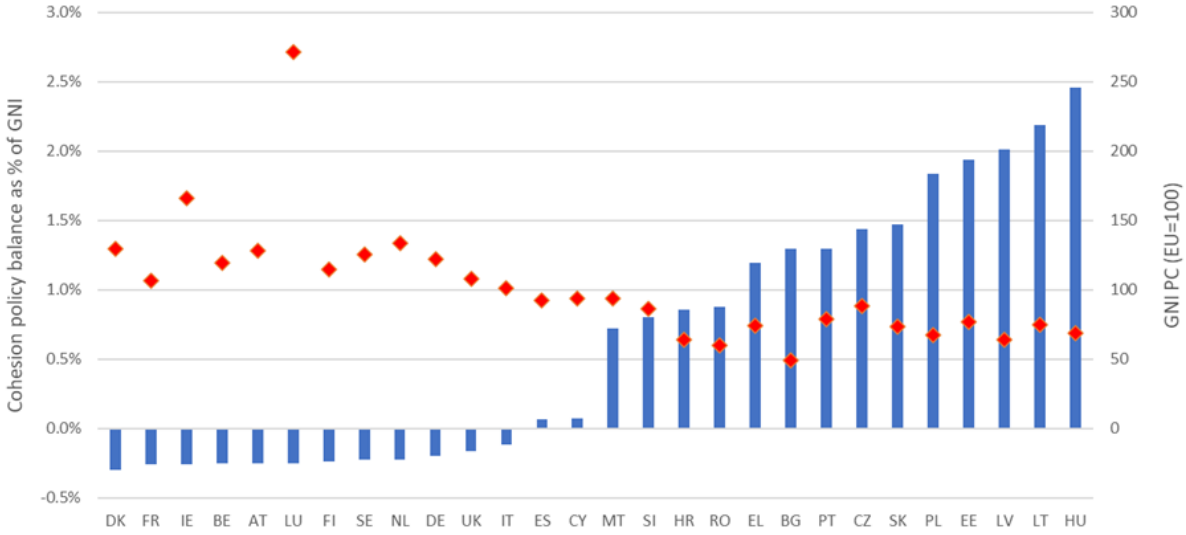
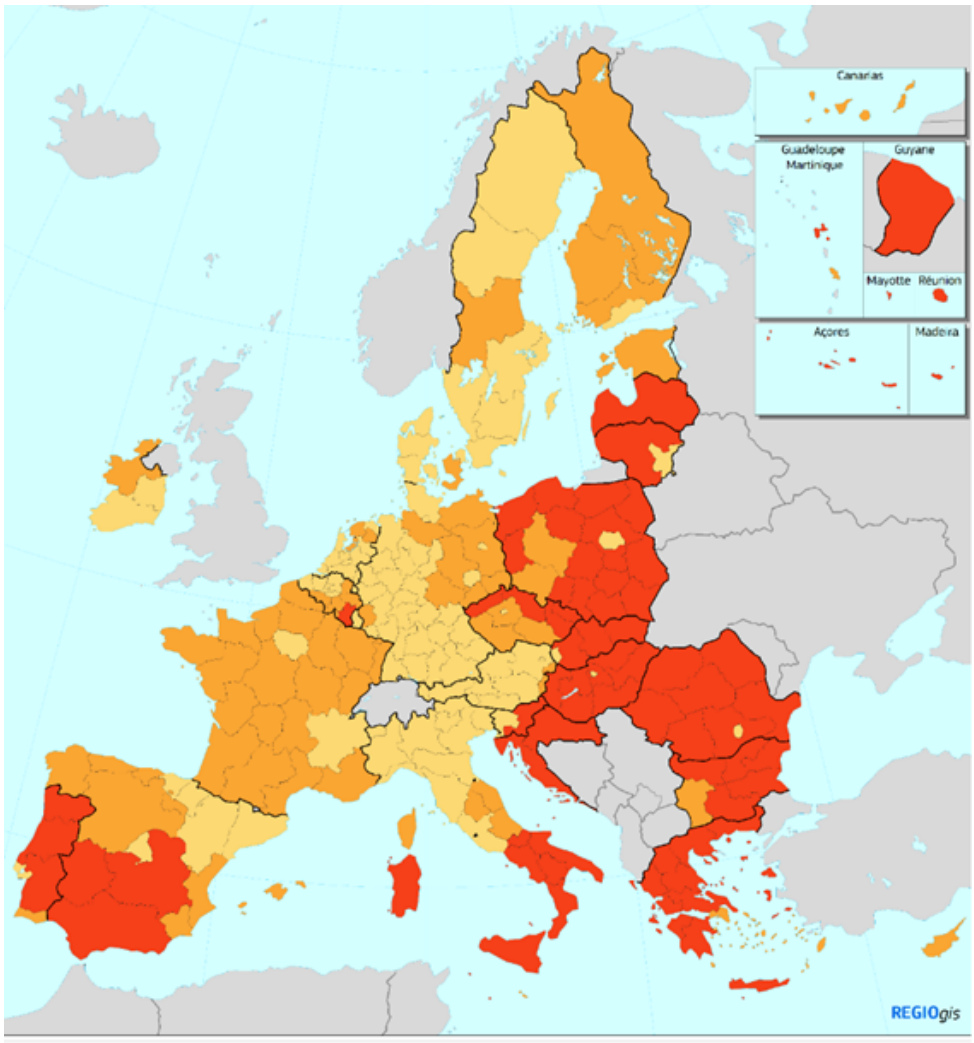


Figure 16: *Cohesion Policy balance (% of GNI) and GNI per capita, averages 2007-2021 (Source: DG REGIO calculations based on European Commission data).*

Turning to the subnational scale, the method used to allocate the EU Cohesion Policy amounts is based on allocating resources to NUTS 2 regions (244 regions with populations of 800,000 to 3,000,000). The method's main indicator is the region's level of development, with some variations between categories of less developed, transition and more developed regions. The group of less developed regions includes regions with a GDP per capita of less than 75% of the EU average, so-called transition regions have a GDP per capita between 75% and 90% (2014-2020) or 100% (2021-2027) of the EU average, and more developed regions have a GDP per capita above 90% (2014-2020) or 100% (2021-2027). In broad terms, the prosperity gap for each region is calculated using the GDP/head (in PPS) as the indicator of regional prosperity, taking account of population and of national prosperity.

Several additional indicators are then used to fine-tune the allocation according to the situation of the regions. These indicators reflect socio-economic, environmental, and demographic challenges: unemployment, youth unemployment, low level of education, greenhouse gas emission, external migration. Each Member State's allocation is the sum of the allocations for its individual eligible regions. There are a number of additional amounts for certain types of area and situation (e.g. Outermost Regions, Northern Sparsely Populated areas, Just Transition Plan areas etc…). Furthermore, the final allocation of a Member State can be capped to respect a predetermined percentage of its total GDP (to ensure that the allocated EU funds can be adequately absorbed by the Member State). This ranges from 2.3% of GDP for regions below 68% of the EU average GNI per capita

in PPS to 1,5% for those below 55% of the EU average GNI per capita in PPP. Member States then have a degree of choice in how these national allocations are organized into programs which can be at national or regional level depending on the institutional arrangements in each Member State. However, a Member State supposedly must respect the allocation to each of the three categories of regions to ensure that the resources are concentrated on the least developed regions in accordance with the EU Treaty objectives. European programs can, however, be modified during their implementation.[47]



Investment for jobs and growth goal (ERDF and ESF+) eligibility, 2021-2027

Categories of regions

- Less developed regions (GDP/head (PPS) less than 75% of the EU-27 average)
- Transition regions (GDP/head (PPS) between 75% and 100% of the EU-27 average)
- More developed regions (GDP/head (PPS) above 100% of the EU-27 average)

GDP/head: average 2015-2016-2017

0 500 km

© EuroGeographics Association for the administrative boundaries

***Figure 17**: NUTS 2 regions eligible to the three categories for the 2021-2027 period (Source: European Commission).*

Finally, support comes with strings in Europe. This is most visible in the application of macroeconomic conditionality – i.e. respect of the EU's limits on national deficits – to Cohesion Policy. Macroeconomic conditionality gives the EU Council of Ministers, on proposal of the Commission, the possibility to suspend payments from Cohesion Policy when a Member State fails to meet the requirements of the Stability and Growth Pact.[48] Furthermore, 2014-2020 reforms introduced a broad range of ex ante conditionalities which had to be fulfilled before payments could be made by the Commission. These include, among others, mechanisms to ensure effective implementation of state aid and public procurement rules, the EU Charter of Fundamental Rights, the effective application of

EU legislation for water and waste, or the requirement to develop regional innovation (smart specialization) or transport strategies.

8.3 Similarities: co-financing, matching grants, co-implementation

Cohesion policy is implemented through matching grants. The matching (or co-financing) takes place at the programmatic rather than project level, leaving flexibility to Member States and regions to determine the level of support to individual projects. In most Member States, most of the co financing comes from national or regional sources, depending on the distribution of revenue collection powers. Most Member States apply subnational borrowing rules which limit alternative sources of revenue. Increasingly, public expenditure is being replaced by private expenditure as a source of co-financing in business development and innovation. Co-financing rates are modulated according to the level of development of a program area and agreed at program approval. Average co-financing rates are around 75%, meaning that expenditure is reimbursed at a level of 75%. In poorer areas, these rates can rise to 85%. The lowest co-financing rates in rich regions is around 35%. For certain investment priorities, parts of programs can rise to 100%.

In the US, a common approach to distributing place-based funds is through competitive, or quasi-competitive, grants. But this raises doubts about a level playing field, since some regions may better compete for such grants than others. On this basis, with the understanding that these funds offer large-scale rewards but relatively low probabilities of success, architects of place-based programs have created multi-stage competitions that involve both planning grants and implementation grants. They argue that the planning phase allows regions to build capabilities that make their strategies more attractive to other investors should they ultimately lose out on federal funding (Haskins et al., 2023). This multi-stage application process is justified as promoting improved region planning capacity, even if there are not enough resources to provide an implementation grant to every applicant.

European policy tends to have longer time horizons than American equivalents. Programs are generally negotiated for a period of 7 years with an additional three years to complete expenditure. This allows long-term investment strategies to be supported. In contrast, for the American case, Reynolds (2024) notes the twin risks that short term political priorities will be woven into industrial policies, and that they will then be reversed with changing administrations. This creates greater volatility than in the EU case, with its longer programming, in spite of a certain ability to modify and

adjust during implementation. Some of the the Biden Administration's programs, on the other hand, unless repealed by Congress, are of such magnitude that they seem to have brought longer term industrial policy horizons, and their regional offshoots, to the USA.

Area	EU	USA
Policy competence	Treaty objective	Local governments and states are the primary agents with less federal intervention
	Shared between EU level and MS	Fiscal federalism
	Long tradition of fiscal equalisation and regional policy in many MS	
Budget determination	Negotiation between MS as part of the Multiannual Financial Framework	Federal budget negotiations on sectoral initiatives
	Part of juste retour	
Revenue	Largely funded through EU or national budgets	Primarily financed through local taxes (for State policies)
	Cofinanced with national and regional public and private expenditure	Some federal resources for distressed areas and individual policy objectives; massive increase with Biden Acts
Time-horizon	Multiannual investment programs	Tied to time-limited policy initiatives at federal level
Allocation mechanisms	Generally based on objective criteria for regional support	Emphasis on local and regional competition, both for federal government resources and private sector funds
	Generally targeted at regional level (NUTs II)	Different detailed targeting mechanisms
Relation to other policies	Strong links with other EU policy in goal setting and implementation	Little federal regulation of investment incentives
	Strong EU level regional state aid framework	
Policy mix	Strong focus on integrated programming	Largely sectoral
	Interventions reflect level of development	
	Range of territorial approaches	

Table 5: *Comparison of governance, implementation, and financing.*

8.4 Policy management

European cohesion policy is managed under a system known as “shared management,” where budget implementation tasks are delegated to Member States under the supervision of the Commission. Depending on the institutional structure of the Member state and notably the degree of decentralization of policy competences and fiscal and expenditure responsibilities, Member States decide whether to implement Cohesion Policy programs at national or regional levels or a combination of both. Of 414 programs in the EU in the 2014-2020 period, 126 are administered at national level and 288 are administered at regional level. All Cohesion Fund programs are managed nationally, while roughly three quarters of ERDF and ESF programs are managed at regional level. Large Member States tend to be dominated by regional programs with almost all programs being managed at regional level. The picture is slightly different as regards the distribution of financial resources in national and regional programs. Roughly 40-45% of total resources are allocated through regional programs.

Under the principle of shared management, the regulatory framework sets out the respective responsibilities of the European Commission and national or regional authorities. The programs reflect an agreement between the Commission and the relevant Member State authorities setting out objectives, actions, indicators and expected impact. Before programs are adopted the Commission assures itself that the audit, management and control systems in the Member States meet several key requirements, based on the EU Financial Regulation and international accounting standards. It is responsible before the European Parliament for the supervision of the budget and the proper use of the funds. Where illegal expenditure is undertaken by the Member State and is not corrected, the Commission has the possibility to suspend or reduce payments. The goal of reducing errors has led to rigorous accounting and audit arrangements, while the need for accountability has led to extensive reporting requirements. This complex system of conditionalities and obligations resembles the commitments framework that is built into the Biden Administration's CHIPS Act.[49]

There has been extensive reflection in the EU on the role of administrative capacity in affecting and implementation and government quality is a key determinant of administrative performance in terms of financial compliance, timely spending and outcomes. Mendez and Bachtler (2024) There is therefore a strong focus on technical assistance and capacity building in Cohesion Policy that has grown in the last years, especially in lower state capacity regions. Up to 4% of the resources allocated can be used by Member States and regions to support the implementation of programs, carry out audit, communication and evaluation activities as well as studies. As a result, many Member States have set up dedicated departments at national or regional level responsible for the implementation of the policy. Over time these have become an integral part of national and regional administrations.

The increase in requirements has led to ongoing calls for simplification from Member States due to complexity and administrative burden. At the same time, it leaves little scope for experimentation, in spite of the fine-tuning alluded to during implementation alluded to above, since such fine-tuning cannot change overall objectives or strategies, concerning implementation only. Moreover, EU administrative procedures and costs, for auditing and managing Cohesion policy, are considered complex, high and difficult (Bachtler et al., 2014).

8.5 Similarity: the risk of capture and the rise of non-governmental ecosystems and contractors

In both the EU and the USA, the implementation through complex negotiations and competitions between different scales of government has generated large ecosystems of private sector intermediaries responsible for the provision of services and consultancy. In Europe, much of this work is carried out for the bodies responsible for implementing the funds. For example, in the 2014-2020 period more than 3000 evaluations were carried out at different levels. Consultants are often employed by project beneficiaries to help navigate the application process, as well as the respect of relevant EU and national legislation in the areas of environment, public procurement and state aid. In richer regions, many local authorities and other public actors have their own staff, but in less developed regions much of this work is externalized. Traditionally the focus of support of the policy has been on SMEs who often require support to develop projects. Many public authorities have developed extension services, often run out of cluster organizations or development agencies. However, there is an increasing use of vouchers to encourage a market for business advice.

In the USA, there is also a large private-sector and NGO consulting business, including in some cases university-based applied research contractors, who are called in by local governments – including some large cities and states – to respond to federal competitions. This differs from the more systematic approach taken under, for example, the Clean Air Act, which resembles the European approach with its clear regulatory standards and long-term horizons, and where governments generally build up considerable internal technical capacity to prepare regional clean air plans. Though they may have recourse to consultants for technical issues, the core of the work is done by stable public bureaucracies. In the type of place-based policies we are examining here, that is generally not the case. As a result, in both Europe and the USA there is a risk of capture of both federal policy and local responses by these intermediaries, who can exhibit rent-seeking behavior all along the policy cycle and have become lobbies for continuing their work.

Area	EU	USA
Legislative framework	Single legal framework	Patchwork of acts and initiatives
Relationship between central a	Contractualisation through programs negotiated between EU and MS or regional level	Variable by program
Management and control framework	Strongly constraining framework with control of expenditure by EU and MS level	National and local public accounting rules
	Little scope for experimentation	Significant scope for experimentation
Conditionalities	Large number of fiduciary, economic governance, performance and policy conditionalities	Lower level of conditionalities tied to specific programs; more focus on conditionalities in Biden Acts
Governance and parnetship	Centrally regulated and promoted	Decentralised
Support to capacity and technic	Extensive technical assistance, dedicated platforms and involvement of IFIs	Additional planning grants becoming the norm
Intermediaries	Generally public sector (regional and local government) led	States and local government; NGOs and groups of stakeholders (universities etc.)
	Extensive ecosystem of private consultanties	Extensive ecosystem of private consultanties

***Table 6**: Programming and implementation framework compared.*

8.6 Indicators for evaluation and impact assessment

Since its inception, Cohesion Policy has had a strong focus on monitoring and evaluation. The strong focus on accountability in the financial rules governing the EU budget, the activity of the European Court of auditors as well as the need to communicate the achievements of the policy has led to the emergence of a very robust system of monitoring of financial, output and result indicators. This is built on a framework of common indicators defined in the regulatory framework, electronic transmission to the European Commission and publication of data on an Open Data website. The robustness of the reported data is checked as part of the setting up of management and control systems. Furthermore, Member States are required to publish lists of projects and beneficiaries. Aggregated data is published as part of the annual reporting of the Commission to the Parliament and communication purposes.

Traditionally, impact assessment at the European level has been undertaken through a range of models used directly by Commission staff or by researchers working with the Commission. In the

last 15 years counterfactual approaches have been increasingly used. Due to data limitations this work has focused on GDP and employment outcomes at regional and aggregate levels. This has meant that little work has been done on instrument design and effects at more granular levels. A particular challenge is collecting beneficiary data at European level. The last five years have seen a significant increase in the number of academic studies at national level looking at specific schemes based on matched data from programs and national sources such as statistical offices, tax authorities or company registers. Nevertheless, the availability of harmonized data is a long way behind the US and remains a significant challenge. As a result, an extensive literature on conditioning factors has emerged, but less on the institutional features of specific instruments. The homogeneity of implementation mechanisms under Cohesion Policy and the continuity of programming over financing periods has reduced the scope for natural experiments. Both the Regional Directorate and the Employment Directorate of the EU (equivalent to US federal departments) are currently launching pilots on randomized experiments.

Area	EU	USA
Monitoring	Very robust monitoring frameworks	Light touch central monitoring
Evaluation	Extensive evaluation culture, mainly theory based and modelling, but increasingly counterfactual	Extensive local evaluations, often quantiative; strong academic evaluation, and some departmental evaluation
Impact assessment	Mainly focused on regional GDP and employment outcomes at aggregate level	Focus on local employment outcomes
	Strong attention to conditioning factors	Strong value for money perspective

***Table 7**: Monitoring, Evaluation, Assessment compared.*

8.7 Complexity, Fragmentation, Integration, Information Impactedness

The complexity and variety of programs of both Europe and the USA is obvious from the review in this paper. Any set of policies this diverse and complex is at high risk of ineffectiveness, as clear goals and procedures to reach them are lost in the labyrinth of process; and even with valiant attempts at measuring and monitoring, information asymmetries and impactedness hang over the entire ecology of actors, agencies, interest groups, and geographical and judicial scales. This creates a high risk that interventions can be justified in reference to so many goals, that virtually any intervention can be justified somehow, no matter how little its effectiveness. Paradoxically, attempts

to tailor interventions by integrating them at the place-scale, also make them more obscure and complex to understand and compare.

In Europe, these issues are behind the push for unified assessment and use of a single legal framework and long-term budgeting, with a range of legal defined instruments with eligibility rules that set out the scope and other important conditions of implementation. This reduces uncertainty, increases accountability and protection of public financial interests. On the downside, this creates a significant administrative burden for administrations and beneficiaries and a demand to specialist consultants to help project promoters navigate a highly complex application and payment process. This has in turn has led to new simplified payment schemes, which require upfront work to prepare by managing bodies. The result is that low capacity regions have greater difficulty in making use of them. Finally, it creates a culture of risk aversion which slows initiative and implementation, once again in the weakest areas.

In the USA, by contrast, many argue that the fragmented and somewhat competitive approach for implementing national policies is thought to reward experimentation, using a Tiebout-style public choice logic. In parallel to the European complexity problem, in the USA we lack an evaluation literature that rigorously demonstrates that the federal government absorbs good ideas, eliminates bad ones, and then uses the tested “best practices” in its future programs; nor that best practice guides policy imitation and borrowing among states and localities.

8.8 Strategies for understanding impact

The differences in the design of place-based policies have also influenced the focus of academic work on policy impact. Assessing the effectiveness of Cohesion Policy Interventions has confronted difficulties since the early years in identifying the treatment effects, due to research design. Five factors have been particularly challenging. The first relates to the definition of the treatment. Cohesion Policy, as we have seen, is a complex mix of different instruments combining different types of investment in each region. As a result, policy is often modeled as a uniform budgetary transfer to a given region, while in fact there is great heterogeneity in investment types across different regions. Secondly, there are significant problems of endogeneity as the support provided by Cohesion Policy is largely calculated based on the level of GDP per capita of the recipient countries and regions. Accordingly, there is a strong negative relationship between the magnitude of the policy injection and GDP per capita. Third, in many regions funding has been continuous for many

years making it hard to identify control groups. Fourth, the beneficiaries of the policy are often supported by similar national policies, in richer regions where the EU contribution is lower. Finally, the existence of spatial spillovers implies that the growth rate in a given country or region is affected by interventions implemented in other places. This has been particularly significant through trade and FDI channels as Member States have been integrated into the EU Single Market (Berkowitz et al., 2020).

Unsurprisingly, much of the focus of evaluation has been on the effects on lagging regions, given the large inflows of public resources to them, and the cross-country effect of the policy on convergence and employment. The ERDF and CF in 2014–2020 accounted for around 10% of the total public investment carried out across the EU. The ERDF and CF jointly provided around 3% of total public investment in non-cohesion countries (greater than 90% of the EU average GDP) and 40% in cohesion countries. This contribution was particularly significant in sustaining public investment in the EU after it was reduced in the aftermath of the Great Recession of 2008–2009 and the sovereign debt crisis of 2011 (between 2008 and 2012, public investment declined by 20% in cohesion countries and by 9% in non-cohesion countries) (EC 2022). In the key metrics of policy success has been growth and secondarily employment. This was even in the case in regions, where the cohesion policy contribution was a small part of total public investment. Given the overall objective of convergence, the focus of both growth regressions and counterfactual approaches was cross-countries studies over two or more periods.

The first generation of studies essentially based on growth regressions covering the years before 2007 have been generally inconclusive as regards the positive impact of Cohesion Policy. Most of these studies found more positive effects in less developed regions (Ramajo et al., 2008; Esposti and Bussoletti 2008; Mohl and Hagen 2010; Tomova et al., 2013; De Dominicis 2014). However, the effects when other types of region were taken into account were inconclusive or negative (Rodríguez-Pose and Fratesi 2004; Dall'Erba and Le Gallo 2008). Studies covering later periods using better data and more sophisticated counterfactual methodologies have been more positive (e.g. McCann, 2023a; Becker et al, 2010, 2012, 2018; Pellegrini et al, 2013; Crescenzi and Guia 2016; Crescenzi et al, 2017, Ferrara et al, 2017, 2023; Lang et al., 2023l all find positive results). The results of the studies based on regression discontinuity design suggest that the average multipliers of the policy are in the order of 0.8-1.4 (Von Ehrlich, 2024).

There have been far fewer studies focusing on different instruments aimed at distressed areas. The ex-post synthesis evaluation of Objective 2 2000-2006 provides some useful insights. According to evaluations, funding both boosted growth and helped to improve the potential for future

growth in many areas. It also helped to further social cohesion and territorial balance especially at the local level. Partly because of the small areas on which funding was concentrated and the limited amount involved, much of it went to environmental and community projects which increased the attractiveness of areas as places in which to live. Funding also led to greater local involvement in the development of the local area as well as raising awareness of the potential for locally based action. A number of evaluations, however, pointed to the pitfalls of the spatial concentration of Objective 2 funding on small areas. In many cases, the most effective way of helping the areas to develop was to stimulate the growth of economic activity in neighboring areas where businesses were located.

Unlike the US, there has been a strong focus in the EU on institutions and quality of government and other conditioning factors. and this is reflected in the rich literature on heterogeneous treatment effects and conditioning factors that has developed to explain differences in national and regional outcomes. The issue of quality of institutions and local government has been extensively studied with a clear link with effectiveness of policy outcomes on GDP and employment (Ederveen et al., 2006; Beugelsdijk and Eijffinger, 2005; Rodríguez-Pose and Garcilazo, 2015; Albanese et al., 2021). Since 2014, governance and the regulatory environment have played an increasingly important part in the design of Cohesion Policy through conditionalities and the use of technical assistance in addition to financial support. This has also had implications for efforts to revitalize former industrial regions or declining rural areas, where the lack of administrative capacity of public actors, private sector initiative and a weak civic culture has made it difficult to effectively implement regeneration program. This has been particularly prevalent in areas in central and Eastern Europe, but also in areas dominated by a single declining industry.

In recent years, there has been a growth in studies looking in more detail at different policy instruments, geographies and outcomes that seek to go below the regional level to look at firms, employment and skills, transport infrastructure, innovation. A summary is provided in annex 1.

The same is likely true of the varied American experiences with resilience or recovery (or not) from distress. There are some contrasting American examples that come to mind of resilient success (eg Rochester New York) compared to long term decline (St Louis); and even in the American developing South, differences between areas that enjoy robust quantitative growth, from initial catch-up strategies, but then seem to hit a middle-income trap (possibly Phoenix and Las Vegas today). These contrast to the spectacular long-term rise (in both per capita income and population terms) of metro areas such as Austin, Atlanta, and Houston. Thus, a key challenge for research is to much better and more systematically understand how investments do or do not translate into sustained local success.

Another way of thinking about such policies, whether getting out of distress or managing long-term growth after initial partial catch-up, is that there is a "narrow corridor" to bringing together the hard and soft (conditional, institutional, learning) conditions for such success; this echoes Rivlin's (2018) call for more integrated place-based policies. This need seems valid for both the American and European experiences.

9. Concluding Observations: excessive inequality in the USA; insufficient growth in the EU; political economy problems in both

In the context of overall structural similarities in the post-1980 spatial inequalities that we describe above, we have identified some important USA-EU differences. There are also some common challenges to making effective place-based policies. Let us take each in turn.

Europe has a major growth and innovation deficit compared to the USA. The US has a more innovative economy with higher long-term growth in incomes than Europe, but it is both interpersonally and spatially more unequal than Europe. Europe has lower levels of interpersonal inequality, but lower growth and innovation. According to the IMF (2024), the differences in total factor productivity between the European Union and the United States explain about 70 percent of the total per capita gap between the two economies.

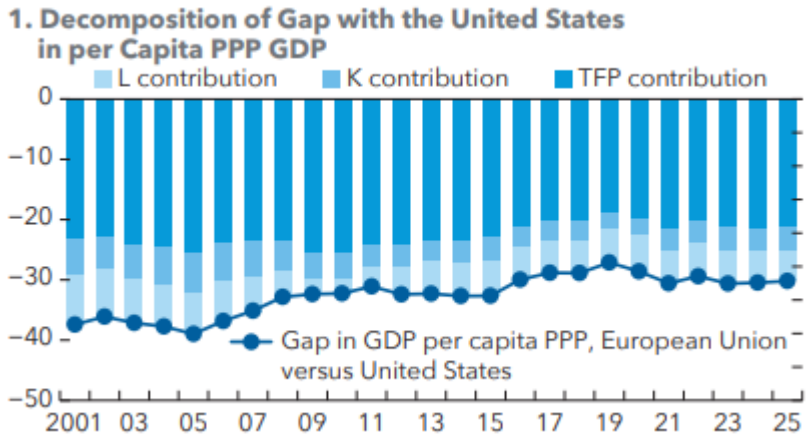


Figure 18: *Decomposition of EU's gap with the US in per capita PPP GDP (Source: IMF, 2024).*

The TFP contribution is mostly due to the higher-innovation composition of American economic output. Even though some parts of Europe have hourly labor productivity that equals that of the USA, this tends to be in legacy industries that are relatively poor in generating new employment, especially of college graduates. In the USA, high labor productivity is augmented by its bigger, more specialized regional economies, which facilitate better sorting and matching of factors of production. Even though routine work is highly automated in the USA, there is more labor-rich cutting edge innovation activity in the cities than in Europe. In September 2024, the Draghi Report to the EU was released, noting that "only four of the world's top tech companies are European and that Europe's share of global technological revenues dropped from 22% to 18% between 2013 and 2023, while the US share rose from 30% to 38%." Figure 19 illustrates one of these gaps (to be replaced with our data in later version of this paper)

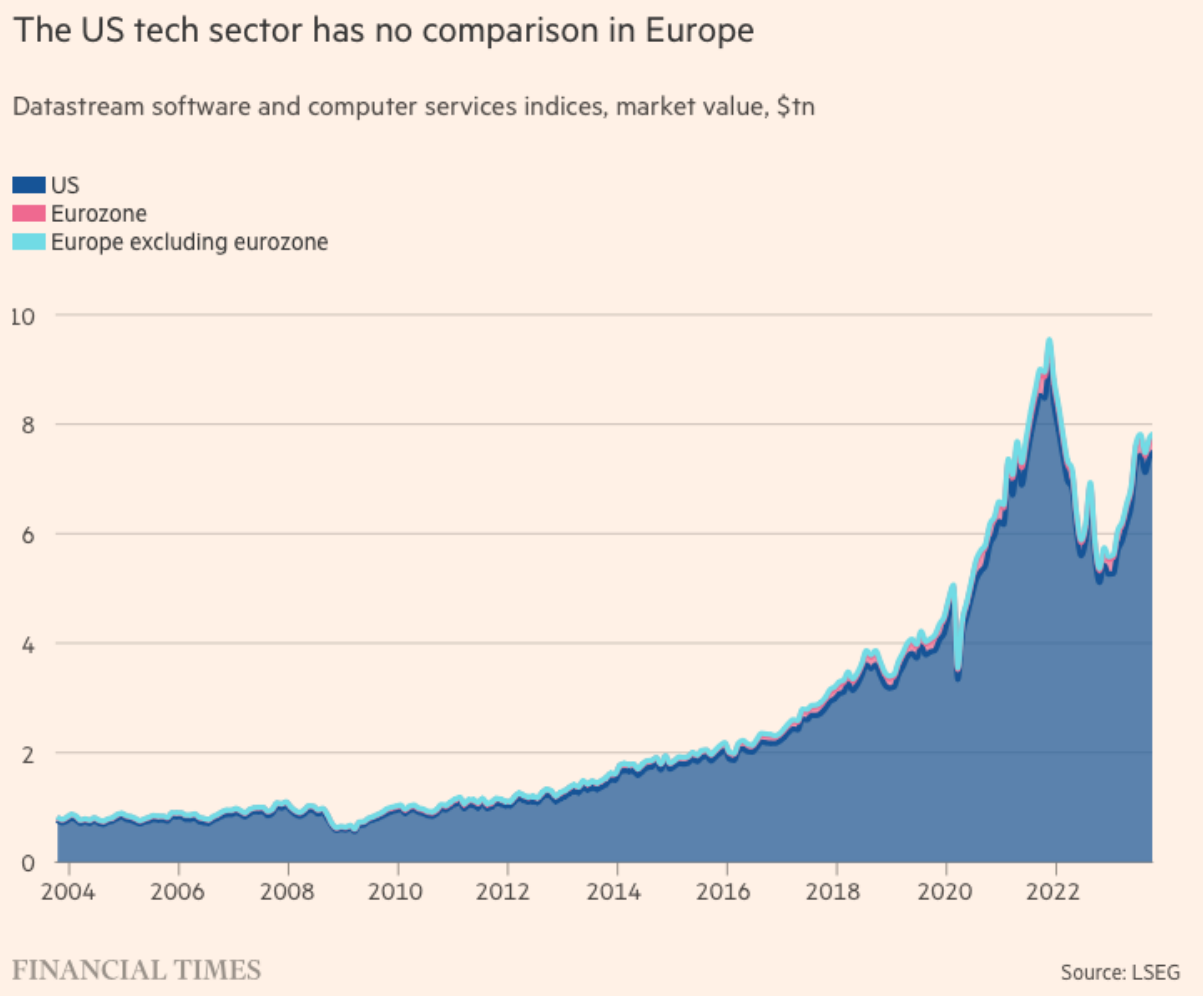


Figure 19: *The US tech sector has no comparison in Europe (Source: FT).*

Europe grows too little. Overall economic growth in the USA and Europe is, of course, the sum of growth performance of their constituent places. In both continents, there are trapped places, meaning those that underperform on a set of indicators and have stopped growing over relatively long time periods. But more places are trapped in Europe, and some of them are at high income levels (Table 8, below).

Table 1.3 Socio-economic characteristics of 'development-trapped' and other regions, average 2003–2021, by level of GDP per head, 2003

	Development trapped?	GDP/head (PPS) in 2003, index EU-27 = 100			
		< 75 %	75 - 100 %	>= 100 %	All
% of industry in GVA	Yes	21.5	14.8	18.8	18.1
	No	26.3	18.1	20.9	21.0
R&D expenditure as % of GDP	Yes	0.4	1.2	2.0	1.8
	No	0.9	1.5	2.5	2.1
% of population 25–64 with tertiary education	Yes	12.1	20.2	27.0	23.9
	No	20.9	27.7	30.9	27.2
Institutional quality index	Yes	-1.6	-0.5	0.3	-0.1
	No	-0.8	0.1	0.6	0.1
% of population (2021) by GDP/head level		23.3	22.5	54.2	100.0
% of population (2021) in trapped regions		2.4	7.3	18.6	28.4

Note: Socio-economic characteristics are average values of all available reference years in period 2003–2021.
Source: Eurostat [rd_e_gerdreg, lfst_r_lfsd2pop], JRC (ARDECO), University of Gothenburg, DG REGIO calculations.

***Table 8**: Development trapped regions in Europe (Source: European Commission).*

Europe's place-based policies should have greater emphasis on regional contributions to European growth. Policies for places in Europe, therefore, have a bigger need to contribute to improving overall economic growth than in America. Insofar as such growth will have to come from places, it follows that there need to generate more growth contributing places in Europe than there have been in recent decades, as – even in the USA – there is some kind of natural ceiling on how spatially concentrated a national economy can become and on the limits to agglomeration economies.[50] In terms of the place-based policy agenda, then, in Europe the overall challenge is to reduce inter-place inequality — which is broadly similar to the USA — while raising growth contributions of as many places as possible.

Unlike the US, the European Union is still enlarging, and this has provided significant opportunities for rapid catch-up growth over the last 20 years. Furthermore, as recent reports by Enrico Letta and Mario Draghi have highlighted, the incomplete European Single Market offers many opportunities. This includes greater scale for young, innovative companies and large industrial firms, a diversified energy market, demand for decarbonization technologies, more resilient supply chains and above all mobilizing greater volumes of private finance. But this also brings adjustment costs. The policy problem is therefore more complex than in the US since the pathway of growth, and the associated spatial equilibria, will be shaped by the asymmetric effects of further market integration.

In this respect, place-based policies will need to play an important role in facilitating these adjustments.

The existing spatial allocation of the USA, along with other factors, already contributes to better income performance than in Europe (along with many other factors), but does so at the price of higher interpersonal and territorial inequalities (Chancel et al, 2023). In the USA, the challenge is more to alleviate strong local or regional cases of stagnation and distress, which threaten local human welfare and social and political cohesion. There may thus be more room to spread development and relieve distress through redistribution because there is more growth to start with in America and much lower fiscal burdens than in Europe, on average.[51]

Having seen the critical differences in the context for place-based policies in the USA compared to Europe, there are some similar challenges to improving them in both continents:

Political economy problems in place-based policy are rife in both the USA and Europe. The sheer complexity of place-based policy comes to mirror the complexity of causes, but this leads to generalized information impactedness – who is doing what? The field's attempt to meet the challenge of complexity (and in light of the research inadequacies noted above) with policy complexity, integration, multi-level governance, and flexibility carries great risks. These consist of everything from proliferating principal-agent problems to magnifying rather than reducing information impactedness by the use of proliferating indicators, metrics and reporting requirements. At the same time, such policies do require consent and cannot be steered without public participation and local leadership, often stymying attempts at simplification and transparency. Place-based policy design is thus afflicted by major moral hazards that need to be addressed at the point of policy design.

Research should be more historical. The kinds of problems and opportunities of the place-based policy field generally unfold over periods of about a half century. The half-century time scale corresponds to industrial revolutions that generate major structural shocks to the economy and its geography. Sometimes lagging (or underdevelopment) is an even longer-term phenomenon. And convergence and integration unfold against both of these forces and in long-historical time. Distress and high-prosperity innovation/cluster formation basically follow the rhythms of industrial revolutions, as the transition in the 1980s from the Manufacturing Age to the Third Industrial Revolution generated distinctive patterns of income, agglomeration, employment and migration. . Other shocks, such as globalization through policy liberalization and transport/logistics improvements, also tend to unfold over decades. Research that seeks to inform rigorously on the causes of distress or prosperity needs these time horizons, and it needs to be able to inform policy on the time horizons

of constraints to the measures they adopt, or the latency periods on their potential effects. Even in Europe, policy is not sufficiently sensitive to the time horizons under which causes and effects unfold; in the USA, short-termism is much more prevalent.

We lack sufficient understanding of the tradeoffs between inequality and productivity/growth in shaping spatial allocation. The structural-historical perspective noted above should frame policy design and evaluation through the optic of how spatial inequalities and efficient spatial allocation relate to one another in different periods and contexts. Place-based policies, if they are effective at all, should have some impact on spatial allocation, efficiency, and inequalities. But we largely lack the capacity to consider policy design in light of these fundamentals, as well as how to evaluate how policy affects such fundamentals.

As it stands, spatial allocation academic research has mostly centered on a debate between "too much concentration" and "not enough concentration" of development (e.g. Duranton and Puga, 2023). Policy design and evaluation mostly take place in another sphere, that of hopeful pronouncements about localized spreading of welfare, employment or innovation.

But the two ways of thinking deserve integration. European policy making already incorporates an implicit notion that it can go toward a "goldilocks zone" of spatial inequalities, consisting of spatial allocations that are "close enough" to aggregate output efficiency at any given time, while avoiding what it deems to be negative societal externalities and dynamic effects of inequalities on people (eg inter-generational spatialized social mobility traps; see Chetty et al., 2014; Connor and Storper, 2020).[52]

In both the USA and Europe, existing spatial allocation research does not have the time horizons, distributional effects (interpersonal, inter-place and inter-generational) to tell us what are the possible spatial allocations that lead to different levels of productivity, growth, inclusion and avoidance of major societal negative externalities over the medium run. The comparison in this paper suggests that spatial economics and allied disciplines should give policymakers better framing for their policies in terms of how they should affect such fundamentals in the medium run.

We need more ambitious and wide-ranging policy evaluation research. A further extension of the point that we need to formulate/design policies with more reference to fundamentals of spatial allocation, and considering the medium-run relevant time periods under which those fundamentals switch and unfold, is that we need to evaluate them in light of how they do (or do not) affect these fundamentals. Typically, the claim that place dynamics are complex is a means to avoid asking questions in evaluation research that relate to these medium-term fundamentals.

When evaluation research is carried out, i.e. on a program-by-program basis, or that investigates discrete causes of catching up or resilience, the complexity problem comes back. Development is an extremely noisy complex process, and thus, evaluating what a place-based policy does requires that research isolate the effects of the policy from the complex set of other causes of development. Even without framing evaluation research with respect to fundamentals – as we urge above – huge challenges to research abound endogeneity; too many possible interaction terms; non-linear effects; sample limitation or bias; omitted variable bias; non-standard area sizes; and so on. It is striking that there is little literature that provides us solid comparative panel evidence on what works and what does not work to overcome underdevelopment or to exit from distress, or to form a cluster. Research should go in the direction of rigorous comparisons (eg synthetic controls) and panels.

Specifically, we need results that show us why a given mix of top-own policy and local initiative allow some regions to overcome their lagging status and others do not; why some regions exit distress and are resilient and others do not; why clusters form where they do and whether this can be imitated by policy.

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Annex 1: Evidence on the impact of Cohesion Policy

Earlier studies such as Dall'erba and Le Gallo (2008) and Le Gallo et al. (2011) found little evidence of spatial spillovers. However, Amendolagine et al (2024) use a heterogeneous panel model to accommodate spatial dependence and spillover effects and demonstrate that Cohesion Policy generates substantial heterogeneous spatial spillovers and the positive effects outside target regions.

Confirming earlier studies, strong spillover effects are challenged by trade linkages to richer central regions. (…….) Maucorps (2020), using structural equation modeling, identifies positive and substantial spillovers from EU Cohesion Policy from less developed areas. Blouri and von Ehrlich (2020) use a general equilibrium model calibrated for the regions of the EU in order to focus on three main channels: wage subsidies, local productivity amenities, and local transportation infrastructure. They suggest that local transportation is the most likely to create positive spillovers. Crucitti et al (2024) use a dynamic spatial general equilibrium to model regional contributions through taxes and expenditure in six sectors for each of the NUTs 2 regions in the EU. The analysis suggests that cohesion policy programmes had a positive and significant impact. The impact is higher in less developed regions, but in the long run, it is also positive in richer Member States due to international spillovers. In conclusion, these studies suggest that there are significant trade spillovers in the context of Cohesion policy. However, there is much less conclusive evidence on the dynamics of congestion and agglomeration effects.

A number of studies have focused on infrastructure and highlight the complexity of assessing the localized impact of network investment. As a result, the effects of transport investment are highly heterogeneous (Crescenzi and Rodríguez-Pose, 2012). Different studies have argued that returns on motorway investment offer low returns compared to secondary roads (Crescenzi et al, 2016), while others see more positive results (Del Bo & Florio 2012). A key feature of transport investment is that it lowers transport costs for regional actors, but also for competitors outside the region. As a result large-scale network infrastructure is likely to benefit those places which are able to exploit agglomeration economies (Puga 2008). But in some cases, such investments have allowed poorer regions to exploit locational and cost advantages in industries such as vehicle manufacturing or the aeronautics industry.

In addition to investment in public infrastructure, Cohesion Policy has provided considerable support to SMEs, with exceptional support for large companies. For example, in the 2007-2013 period support was estimated at EUR 6 billion, representing 20% of all ERDF spending on direct enterprise support in the EU-28, with the remainder going to SMEs. A review of a mix of EU and national counterfactual evaluations by the European Commission in 2012 concluded that for large enterprises there is little evidence of long-term benefits due to deadweight effects. (EC 2012) One area of investment which shows more positive outcomes are research investments with links to local SMEs. The regulatory framework was therefore adjusted in the 2014-2020 period. An evaluation undertaken in 2015 by the Commission concluded that in only 20% of cases, ERDF support was among the main causes of project implementation. In 50% of cases, ERDF support was successful in inducing changes

in corporate behavior, particularly influencing the timing and the scope of the implemented projects. In 30% of cases, ERDF support had little influence on the behavior of large enterprises. (EC 2016) Furthermore, as the resources came from the EU budget there was considerable political concern about relocation from richer to poorer Member and the durability of investment.

Bachtrögler et al., (2020) show that the average treatment effect on supported (treated) firms (ATT) is relatively large in terms of boosting both value added and employment growth. However, outcomes are heterogeneous and the impact on productivity is smaller across countries and not always significant. Crescenzi et al., (2020) studying an Italian SME scheme found only positive employment effects. Banai et al., (2020) identified a significant positive effect on the number of SME employees, sales revenue, gross value added in Hungary. However, the labor productivity of enterprises was not significantly affected by any of the support schemes. Benkovskis et al., (2019) suggest that projects co-financed by the ERDF increase firms' employment, turnover and capital stock per employee immediately, while it raises their productivity only two years after the launch of the projects. ERDF beneficiaries that are initially less productive, larger, less capital intensive and more financially leveraged enjoy larger productivity gains. Finally, studies by the World Bank (2019) and Statistics of Poland's SME and innovation support programs over 2007-13 finds similar results - there are positive impacts on firm employment, sales, value-added and exports. In contrast, there is mixed evidence about the impacts on productivity, depending on the productivity measure used. They suggest that the lack of impact on productivity enhancing investment may be partially driven by a crowding-out effect if firms lack the capacity to absorb capital efficiently. Instead of increasing investment, firms may choose to redirect private funds towards other purposes (for example, increase hiring).

Workforce training and skills. The fund that invests in workforce development -- the European Social Fund (ESF) -- had a budget of around EUR 75bn for the period 2014-2020 The results of an updated meta-analysis of the available ESF and YEI counterfactual impact evaluations carried out in the 27 Member States and the UK showed that participants in ESF/YEI measures had, on average over the 2014–2020 period, a higher likelihood of being in employment after-wards than comparable non-participants, amount-ing to 6–8 pp (EC 2022). Guia et al., (2022) provide evidence that Cohesion Policy projects have had a positive effect on the wage gaps between local employees and immigrants. Fusaro and Scandura (2023) find positive impact on employment of the European Social Fund on youth education and employment but highlight that such results are strongly influenced by local specialization in high-skilled activities. Furthermore, studies suggest that there is division in education outcomes between those with low and upper secondary education that could potentially worsen pre-

existing inequality in the long run. Crescenzi et al., (2020) concluded that learning mobility programs can reinforce skill matching only if problems of beneficiary self-selection can be addressed. Biedka et al., (2022) examine the impact of Cohesion Policy support for human capital at municipal level in Poland. This has a positive effect on local revenues, both during and after the intervention. However, although the authors do not find direct evidence that cohesion policy stimulates out migration of skilled people in Polish municipalities, there is also no sign that EU funded investment in human capital prevents depopulation of the least developed areas in the country.

Migration and sorting. There is relatively little evidence on the impact of Cohesion Policy support on the retention of skilled workers in the context of outmigration. Given the urban wage premium in large European cities (Ahrend et al., 2014), the pull factors are potentially significant. The European Commission recently adopted a communication "Harnessing Talent in Europe's regions" (European Commission 2023) which addressed the challenge of encouraging the development and retention of highly skilled individuals, and the Draghi and Letta Reports both refer to a "right to stay." This certainly contrasts with historical American attitudes and practices that emphasize mobility, but does find a recent echo in the USA, where lower levels of geographical mobility are leading some to rethink the emphasis on leaving to opportunity as a solution to place-based problems. Note, however, that these concerns in both Europe and the USA probably mostly concern not the highly-skilled, but other population groups. And that policies to encourage or enable people to stay may conflict with spatial allocation concerns (see conclusion).

Many different regional characteristics have also conditioned the effectiveness of Cohesion Policy. These include human capital endowments (Becker et al. 2013, Fratesi and Perucca 2019), settlement structure (Gagliardi and Percoco 2017), industrial structure (Cappelen et al. 2003, Percoco 2017), population density (Albanese et al. 2020). This heterogeneity has been used as the basis to argue for the need to place-tailor policies (OECD 2009, 2024, Barca 2009, Iammarino et al ….., McCann, 2023a), but it also raises the question of policy mix.

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[1] Switching scales a bit, in the post-war period, Europe's original member states enjoyed intra-member-state convergence in the same period (the "trente glorieuses annees") but did not have the US's conditions for inter-state convergence.# There is currently a very positive growth experience in eastern Europe that, at least superficially, mirrors the US Sunbelt experience in the post-war period. This is a period in which inter-state income convergence took place, just as European integration has done the same for inter-Member State convergence more recently. However, this process is not uniform across Europe. European integration has in more recent years accompanied a strong catch-up convergence process between Member States driven by fast

rates of growth in the Member States that joined the EU since 2004. Growth has been much slower in poorer regions in the South of Europe.

[2] With perhaps one notable exception,the case of the former Confederacy in the American South. The last time there was a coherent and comprehensive federal policy to integrate the South, it occurred in Reconstruction – a federal takeover of the South from 1865 that ended in 1878 with the return of considerable autonomy to the conquered Confederate states. The end of Reconstruction in 1878 brought significant regress in national convergence and integration, because it allowed the reassertion of White power and plantation-based agrarianism. This continued until roughly the second world war, and discouraged certain forms of capital and labor mobility into the South.

[3] Along these lines, it is important to note, as Gary Gerstle argues in his history of American federalism (Gerstle, 2016), that it has always been difficult to establish large-scale federal government planning in America. The Constitution explicitly delegates most "police powers" to the states and explicitly envisioned a weak federal government, so weak that there was no standing army until 1918. The modern vision of a strong central government was invented pragmatically in the Roosevelt era, not through rationalist legislation, but incrementally using large federal appropriations with strings attached, thus "bribing" the states into going along with federal policy objectives. This is the principal reason that major increases in federal power (such as Social Security, Medicare, Obamacare, Medicaid, and so on) are halting and contested and partial. This is certainly the case with place-based policy. Indeed, the last time that the US considered a national spatial economic planning framework was in the Carter administration, when Pres. Carter convened a national commission to address the pain of deindustrialization in the Midwest (cite). That commission finished its work in 1979 by rejecting a coherent national level policy and emphasizing "moving to opportunity" as the solution for distressed communities.

[4] "Embodiment" refers to what in Europe is called "transposition," i.e. the requirement established, after the end of the Civil War, that States "embody" in state law the new federal ban on enslavement. It has subsequently been expanded by interpretation to the notion that when Congress passes a law or regulations that are within the federal government's constitutionally defined powers, the federal government can require states to transpose (embody) that to State law. But, in practice, this is often tested through years in the courts.

[5] Further progress in desegregation was unleashed by the Civil Rights Act of 1964, making it more attractive for Blacks to stay in the South rather than move north (which they had been doing en masse from 1915 onward to avoid Jim Crow re-segregation) (Boustan, Abramovitsky). This amplified the Southern labor supply, in addition to the existing white rural labor supply and then began to be expanded by white migrants from the North, who were beginning to be pushed out of the north due to deindustrialization there.

[6] This was, in their view, made possible by changes in transport costs; air conditioning to make the summers tolerable; and general institutional change in the post-war south more favorable to non-farm economic development.

[7] There were many reasons for this wave of relocation. On one hand, aggressive competition between states over wages and working rules was unleashed in 1947 with the Taft-Hartley amendments to the (Wagner Act/ National Labor Relations Act) of 1936. In addition, air conditioning became available for commercial sites in the late 1940s, and for homes in the US in the mid-1950s, making factory work in hot climates more efficient. Racial desegregation began with the 1954 Supreme Court decision (*Brown versus Board of Education*), and this both made the South more acceptable to northern firms for investments, but also complemented the abundant low-wage white labor supply coming off the farms with the large Black population in the South. Transport investments after the Second World war began to connect smaller metro areas and rural areas to markets and

supply chains, and this was then greatly enhanced by the authorization of the US Interstate Highway System 1954, and its rapid construction in the next ten years.

[8] There is, of course, considerable debate over the role of policy in generating the West Coast high road to development. In the case of Silicon Valley, there was no "cluster policy" to generate it, but there were some antecedents in the form of government supported tech, R&D, and defense spending. As such features were present in many regions, however, it is generally agreed that Silicon Valley was not a direct outcome of cluster policy. Aerospace in LA (an earlier high-tech cluster) had a bigger role for defense investment, especially in World War II, but it pre-dated these booster factors with more spontaneous clustering around early successful commercial aviation.

[9] We will nonetheless return to contemporary attempts to spread high-tech via policy, in both the USA and Europe, in section 6.

[10] In this light, we can now consider some of the specific challenges to the current European cohesion effort. These are perhaps more different from the USA than is commonly understood to be the case.These differences can be seen in the research on the pathway of European spatial allocation in relation to American economic geography in the early 2000s. At the time, there was a political debate about the potential "Americanization" of European economic geography. By the latter was meant the hypothesis that integration would bring about a landscape that was more scale-oriented (firms and metro areas); and more specialized, with a smaller number of bigger clusters in given areas of economic activity. Research (Middlefahrt-Knarvik/Overman, and then Storper etc, and Crescenzi, RP, Storper, etc etc), showed a mixed result. In homogeneous product (commodity) industries, Europe integration was indeed bringing about the standard effects predicted by theory, i.e. merging of companies and supply chains at the continental scale. But in product differentiated industries the outcome has been more nuanced. For example, in Europe, many different car companies and national clusters have survived integration. Thus, in these industries, Europe has avoided full "Americanization" of its economic geography. In the policy debate, this result was a source of relief by those who feared that overly-radical reorganization of the landscape of firms and industries would provoke a backlash against European integration. For others, however, it was a sign of how European legacy geography (and its strong necklace of middle-sized cities) would durably prevent the emergence of large centers of innovation in new technologies leaving European productivity durably hindered relative to its scale-dominated rivals, notably the USA (and more recently, China).

[11] New technologies which transform product and labor markets are increasing both regional and interpersonal disparities. Europe has a problem of scale in many sectors. (Draghi 2024) Policy measures aimed at facilitating greater firm concentration are likely to change the geography of economic activity in Europe, generating more agglomeration economies and spatial inequality. In addition, schemes aimed at increasing the supply of highly skilled workers are likely to encourage mobility towards places which pay best. Secondly, unlike the US, the European Union population is shrinking. After decades of growth, the EU population has been declining since 2020, as net migration is no longer compensating for negative natural growth. At EU-27 level, natural population change and net migration are highest in urban regions, and lowest (and often negative) in rural ones. (EC 2024) Finally, the EU has set ambitious climate targets in the form of a climate law with the aim to be climate-neutral by 2050 and binding targets in 2030 and 2040, an increasingly restrictive Emissions Trading Scheme, sectoral energy efficiency standards and an obligation to phase out coal. Workers in sectors where the impact is concentrated – especially those with specific skills or limited opportunities to move into other industries – may struggle to find new jobs, leading to unemployment and pressures on household incomes. In many parts of Europe fossil fuel production and energy intensive sectors are geographically concentrated, leading to region-wide distress.

These new challenges have required innovative approaches to place based policies. The EU is currently experimenting with three new types of instrument within Cohesion Policy to address these challenges: a Just Transition Fund targeting areas highly dependent on fossil fuel and carbon-intensive industries with a budget of EUR 20bn, a voluntary scheme to support industries in the strategic technologies (with currently EUR 6bn committed), and a set of pilot actions to help shrinking regions adapt to demographic change. These are likely to contribute to the reshaping of Cohesion Policy in the future.

[12] Unless we consider federal Reconstruction of the South between 1865 and 1977 to be a lagging region policy. In some sense it was, as it was intended to achieve political and economic modernization of the post-bellum South and involved distinct measures to combat Southern planter agrarianism through land reform. However, Reconstruction was abandoned in 1877 and the South returned to planter agrarianism through the Jim Crow system, until 1954.

[13] At the same time the resignation of the Santer Commission led to an in-depth reform of the Commission administrative practices, internal control systems and financial and budgetary arrangements aligning them with international standards under the Prodi Commission. (European Commission C 2005) This led to a shift in focus in less developed regions from simply supporting investment to administrative capacity building and improving management of public funds. This in turn led to a significant increase in complexity within the policy.

This increasing focus on institutional convergence was further consolidated in the 2014-2020 reform adopted in 2013 which took place in the specific context of the post economic and financial crisis. This reflected the shifts in the economic governance of the EU and the need to tackle the effectiveness of the policy, notably through taking account of the role of institutions and administrative capacity through conditionality. These issues were closely linked by the concerns of richer Member States that countries receiving cohesion policy funds respected the Stability and Growth Pact, addressed relevant country-specific recommendations and made good use of the funds that were allocated to them. The negotiations on the new framework were shaped by shifting alliances on different issues between net payers, southern Member States and central and south eastern Member States, roughly divided into “Friends of Cohesion” and “Friends of Better Spending” resulting in a broad new balance of interests on the main features of the policy. (Berkowitz 2022).

[14] These conditionalities (renamed enabling conditions in the 2021-2027 period) have taken on a central role in discussions of rule of law, with funds being blocked in Hungary and Poland due to breaches of the EU Charter of Fundamental Rights.

[15] Martin and Graham (1980) assessed the Economic Development Administration (EDA) programs' effectiveness in stimulating growth in US counties. These programs provided loans and grants for public facilities and business development to economically depressed areas. They compared income growth rates of EDA-assisted counties with non-assisted ones before, during, and after receiving aid. During the aid period, assisted counties saw income growth rates about 10% higher, especially those receiving larger grants. After aid ended, many assisted counties continued to grow faster, but this sustained growth was more influenced by factors like industry mix and pre-aid economic conditions rather than the aid itself. Using an economic base model, the study found that while EDA assistance kickstarted growth, its long-term impact was limited compared to broader economic and local factors. Overall, the research suggests that EDA programs effectively boost short-term economic growth in distressed areas, but lasting improvements require additional strategies that address underlying structural economic weaknesses.

[16] Various federal programs apply different approaches, with the Brookings Institute finding that 25 federal agencies use at least 29 different definitions of ‘distress’, varying in indicators, data sources, and geographic focus (Pipa et al. 2022).

Out of the 29 definitions identified, 16 rely solely on economic indicators such as poverty rates, median household income, and employment rates. 13 definitions also factor in measures of social well-being, using metrics like homelessness, food insecurity, and high school graduation rates. The majority of definitions typically define distress at the county level, with some using census tracts, zip codes, or local government units; six definitions include no geographic units of analysis at all (Pipa et al. 2022). This variation arises from several factors. First, different departments have different goals, so while many of the key agencies, like the Department of Commerce's Economic Development Administration (EDA) and the Department of the Treasury will focus on economic distress relating to employment rates or average incomes, others such as the Department of Agriculture and the Department of Housing and Urban Development will include other indicators to suit their programs. Bartik (2020) differentiates between these goals as place-based policies for local labor markets versus community development place-based policies.

[17] It remained mainly a mechanism for reimbursing Member State expenditure on regional policies, due to its origin as a way of ensuring that the United Kingdom was able to receive sufficient resources from the EU budget.

[18] The areas were defined using a range of economic, social and environmental indicators. Economic indicators included high unemployment rates compared to national and EU average, decreasing levels of industrial employment or agricultural employment and declining growth rates compared to national and EU averages. Social and Demographic Indicators included population decline, especially in rural areas or regions affected by outmigration, high levels of social exclusion, poverty, or marginalization, especially in urban and coastal areas and declining levels of public services and quality of life indicators (e.g., healthcare, education, transport services). Environmental challenges such as industrial pollution, urban decay and loss of biodiversity and habitats were also covered

The Community Initiatives under the EU Cohesion Policy were specialized programs introduced to address specific cross-border or thematic challenges that could not be adequately tackled by the mainstream Structural Funds. They covered a broad range of challenges. INTERREG focused on promoting cross-border cooperation between regions in different EU member states. It aimed to overcome the economic disadvantages faced by border regions. LEADER targeted rural development through innovative, community-led approaches. It aimed to boost rural economies by involving local stakeholders in the planning and implementation of projects. RECHAR, RESIDER, RETEX and KONVER focused on supporting regions dependent on the coal, steel, textile and defense industry, which were experiencing decline due to deindustrialization. URBAN addressed urban regeneration issues in cities with high levels of unemployment and social exclusion. EMPLOYMENT addressed employment-related issues, particularly for vulnerable groups like women, people with disabilities, and older workers. ADAPT focused on promoting workforce adaptability to changes in technology and market conditions, helping workers adjust to economic restructuring. EQUAL: Focused on promoting equality in the labor market by combating all forms of discrimination and inequality in employment. It addressed issues related to gender, ethnicity, disability, and other vulnerabilities, promoting social inclusion.

[19] In addition, Objective 5b rural development measures were integrated into Common Agricultural Policy. Third, the process for defining eligible areas had been highly complex, with Member states reluctant to respect population ceilings. The Commission therefore devolved this responsibility to them. Fourth, the management of a large number of Community Initiatives had proved difficult for both Commission and Member States. Most were integrated into mainstream programmes. The LEADER approach became a key feature of rural development policy under the European Agricultural Fund for Rural Development (EAFRD), INTERREG evolved into the European Territorial Cooperation (ETC) objective of Cohesion Policy to promote cross-border, transnational, and interregional cooperation. The principles of the EQUAL initiative were integrated into the European Social Fund, focusing on combating discrimination and promoting equal opportunities in the labor market. The URBAN was both mainstreamed and integrated into a new initiative for urban pilot projects. Finally, pressures to rationalize structures and streamline management and control systems led to a simplification of funding streams.

[20] "In recent decades, many countries - sometimes with lower wages, environmental standards, or taxes - have increasingly competed with Europe in low-skill and low-value added industry segments. The fact that other countries do not all share the same living, social, environmental, tax and other standards as Europe means that companies can use these differences to their competitive advantage. This has led to factory closures, job losses or downward pressure on workers' pay and conditions. Companies which are unable to compete with more productive or cheaper foreign counterparts close, leaving a lasting impact on those laid off, their families and the wider region." (European Commission 2017).

[21] Though there are some apparent cases of "success," notably the industrialization of the South, academic work has always questioned the extent to which the result was more due to a broad set of shifts in comparative advantage, such as those we described above in Section 2 on the integration of the postwar South, or to focused industrial location-attraction-subsidy-tax break policies. Most academic work has concluded that the subsidies were deadweight losses to the economy as a whole (Donohue, 1997). But locally, some places in the South seem to have overcome the cathedrals in the desert outcome (South Carolina), with dynamic further industrialization occurring, whether due to subsidies as starting points, or not (Alabama, Louisiana). Therefore, as in Europe, attention has shifted to why some places seem to have not become cumulatively dynamic (Mezzogiorno), but a few others seem to have.

[22] There is a growing body of thought justifying the renewed focus on industrial policy, with various terms being coined to describe this shift - from Brian Deese's "modern American industrial strategy" to Dani Rodrik's "new productivism" to Ezra Klein's "supply-side progressivism". An increasing number of academics and policymakers now argue that reindustrialization and the pursuit of economic abundance - 'abundance' often championed by right-leaning think tanks - should be central to economic policy, and that government intervention is generally acceptable if it advances these objectives (e.g., Sankar, 2024; Adler and Bonvillian, 2023; Ball, 2024). Reynolds (2024) argues that the Biden administration has shifted the US policy paradigm toward a more robust industrial strategy, aiming to accelerate the development of innovative technologies and key industries while also attempting to rebuild US manufacturing capabilities and support the middle class more broadly (note middle class as opposed to distressed communities). Other concerns are focused on the green energy transition (see below section), geopolitical competition, and supply chain resilience (Juhasz et al., 2024), with a significant emphasis on national security running through all of these elements (Sullivan, 2023).

[23] There are also place-based cluster policies aimed at assisting the transition away from fossil fuels. Innovation is either a stated aim of these policies, by encouraging areas to adopt or develop green technologies, or an important by-product. Regional clean hydrogen hubs aim to "catalyze investment in the development of clean hydrogen hubs that demonstrate the production, processing, delivery, storage, and end-use of clean hydrogen". The regional direct air capture hubs have a similar goal but with carbon capture and storage technologies. On this green technology specifically, the justification behind the shift to place-based policy is less clear - but it sort of follows Aghion et al's (2024) arguments for a "sector-specific industrial policy to best address the energy transition problem", and that this may complement, or even prove more effective than, the conventional appeal for a general tax on carbon. The regional clean energy innovation program, which is significantly smaller than either of the other two programs mentioned, does have a specific aim to create Porter (2001) style clean energy clusters.

[24] This has evolved in recent years due to the commitments taken under the Green Deal, the disruption of supply chains during COVID and following the Russian Invasion of Ukraine, as well as more activist industrial policies in the US and China. (Dullien 2024) This has been facilitated by the influx of resources under the Next Generation EU programme, but also the mobilization of Member State national budgets due to the relaxation of state aid rules. A specific example is the EU's Important Projects of Common European Interest (IPCEI) which allow member states exemption from state aid rules when there is a common European interest in a jointly funded venture to support investment and innovation in a particular sector.

[25] In Europe, the COVID-19 pandemic and subsequent challenges, such as the energy crisis and geopolitical tensions, intensified the perception of a need for supply resilience and led to significant new investment through the Recovery and Resilience Facility and an additional EUR 20bn from the European Innovation Fund generated through the sale of ETS entitlements. This was followed by initiatives like the European Chips Act (2022), which aimed to strengthen the semiconductor ecosystem. The Critical Raw Materials Act (CRMA) and the Net-Zero Industry Act (NZIA), proposed in 2023, address supply risks by increasing domestic production and refining of key materials, promoting clean technologies, and establishing strategic partnerships. These acts seek to stimulate the development of clean technologies, an area in which Europe has traditionally had a comparative advantage, contributing to Europe's green transition and long-term industrial resilience. Although the resources for investment come from relocation from existing EU and national resources, they are accompanied by a range of regulatory measures in the areas of public procurement, state aid and planning that are designed to facilitate and incentivize these investments.

[26] Furthermore, Europe is seeing an acceleration of the growth of tech clusters notably in Amsterdam, Berlin, Dublin, Paris, Stockholm, Barcelona and Munich reflected in a significant concentration of talent, generation of unicorns, and a strong start-up ecosystem. In many poorer Member States and regions, cohesion policy has played an important part of the development of tech hubs in cities like Warsaw, Bucharest, Sofia and Tallinn.

[27] A number of studies highlighted the need for institutional capacity (Grillitsch 2016), their similarity in spite of significant regional differences (Di Cataldo et al. 2021), the path dependence of regional innovation ecosystems (Tsipouri 2017), and weaknesses in the approach to the entrepreneurial discovery process (Giustolisi et al 2022).

[28] In a review of the smart specialization approach in 2017 the European Commission identified a number of further challenges. Firstly, the impact on performance at regional level of national research and innovation policies which could often work in the opposite direction: support to research infrastructures and national scientific excellence on the one hand, confronted placed-based innovation focused on the private sector. This was mainly a problem in less developed Member States. This was compounded by weak regional innovation ecosystems in many poorer regions. A further weakness was the inward-looking nature of many of the strategies which did not take account of channels of innovation absorption through value chains and multinational companies, as well as complementarities within the European Single Market and Research area.

[29] For example, Barca (2009) has argued that place-based interventions can complement policies aimed at developing a European Research Area, by selecting in each region a limited number of sectors, smart specialization, to build on industrial agglomerations and networks. In this respect, there is a supposedly close alignment between building on local capabilities and the development of Europe-wide industrial capacity (Barzotta et al 2020).

[30] Turning to any possible long-term and aggregate spatial effects of deliberate policies to affect the geography of innovation, there is reason to believe that in the 20th centuries, certain policies had considerable influence, notably through defense procurement and the space race (Gunbelt literature, etc). There are some clear cases of top-down governmental stimulation of tech clusters, as for example in the Space Coast of Florida or Huntsville Alabama. On the other hand, there is little evidence that the Southern California aerospace cluster was generated by policy. That cluster took off when Douglass Aircraft won the competition set up by United and American Airlines for an aircraft that could reduce cross-country travel time and stops; and Douglass's DC-3 was selected, generating an enormous boost for LA's nascent aerospace cluster. Subsequently, WW2

procurement built the cluster; and post-Berlin Wall build-down in the 1990s weakened it (partially). In Europe, the Toulouse tech cluster is a similar experience of a large tech procurement program establishing a cluster. But strong caution should be taken in extrapolating from those experiences to the major innovators of the Third Industrial Revolution. Large, capital-intensive tech-systems, such as those in defense procurement or the space race are different from excellence in innovative industries today, which are commercially oriented, open innovation ecologies that cannot be set into place by a major procurement contract.

Along these lines, it is difficult to sustain the case that any of the major tech centers of the USA today – the Bay Area, Boston, DC, NYC, San Diego, Dallas, Austin, Seattle – were principally the result of deliberate policy, though they may have benefited from policies. A possible exception could be the unusual case of Research Triangle Park (Feldmann). Many studies of particular major tech clusters find that there is randomness or luck in why only some places with the underlying necessary conditions for a tech cluster (especially R&D presence and workforce quality) lead to a major cluster, with the selection factor being "a major company" that "breaks through" at the right time. Analogous to the LA story of Douglass Aircraft is the key role of Fairchild in establishing the Bay Area as the USA's Silicon Valley and not its close rival in the early days of semiconductors (Dallas). This history creates a steep challenge to any policy purporting to be able to seriously change the fundamentals of innovation geography. This does not mean that policies do not have a major role in generating the necessary conditions for becoming a tech cluster; but the gap between necessary and sufficient seems very large.

[31] An example of this ambiguity is that in 2012, the European Commission adopted a Communication aimed at reindustrializing Europe by increasing industry's share of GDP from 16% to 20% by 2020. This plan focused on competitiveness through six priority areas, including clean vehicles and smart grids. But basically, this is a strategy for supporting modernization of European legacy industries, not pushing Europe into key Third Industrial Revolution sectors such as IT, software and so on. The push for climate neutrality and rising international tensions further emphasized the policy's importance, especially after the adoption of the European Green Deal in 2019. A revised industrial strategy in 2021 focused on enhancing Europe's "open strategic autonomy," strengthening supply chains, and promoting green and digital technologies. (Tagliepietra et al 2023). More recently the European Commission has adopted a European Chips Act, an AI ACT, Clean Industries ACT and Strategic Investment Platform STEP. These combine both regulation and funding. If judged successful, it is likely that finding will be scaled up in the next financial period post-2028.

[32] While the IRA has a specific geography, with many of the investments being clustered in the battery belt, questions remain as to the extent to which it actually constitutes a place-based policy; the Brookings Institute (2023) did not include it in their assessment.

Moreover, the border between the place-based policies separately from place-blind policies. For example, IRA tax credits provide a bonus of investments target economically disadvantaged communities as well as "energy communities", those that have been historically sited near environmentally harmful industries like coal mining or oil extraction (Reynolds, 2024).

Still other policies seek to assist distressed areas, stimulate innovation, and target climate change all together. The EDA's Build Back Better regional Challenge, which is explicitly place-basd in design and logic, is a cornerstone of the American Rescue Plan (Muro et al. 2021). It seeks to strengthen regional-industry clusters across the USA and foster well paid and resilient and boosting competitiveness (Haskins and Parilla, 2023), especially in both high-technology manufacturing and the production of renewable energy technologies. The objective is to allow localities to fund multi-dimensional cluster strategies, rather than having to piece together fragmented funding sources in a bid to scale up locally (Haskins and Parilla, 2023).

[33] Studies by the EU Commission's Research Centre estimate the annual investment needs for various sectors by assessing the changes in the cost of inaction over time ranging from the estimated need of around

EUR 40 billion per year (for the EU-27 and the UK) in the scenario of limiting the global temperature increase to 1.5°C to EUR 175-200 billion per year with an increase of 3-4°C, (Joint Research Centre, 2020; COACCH, 2022). As a point of comparison it is estimated that economic losses from weather and climate-related extremes in the EU reached over half a trillion euros between 1980 and 2021. (EEA, 2023).

[34] Much remains to be done, especially in severely polluted urban regions, toxic sites, petrochemical regions (eg Louisiana), and the ongoing challenges posed by a spatially expansionary, low density, demographically dynamic country.

[35] In recent years, two of the most contentious issues with respect to foundational environmental protection laws are how much latitude the implementing agencies have to integrate changing scientific views into the purposes as described in laws that were written a half century ago. In 2023, in striking down the Supreme Court ruling from 1984 known as the *Chevron* decision, the Supreme Court said that deference to agency experts was not a general principle and that courts could question the use of science by agencies. This may, in some instances, create a higher bar for agencies to clear to prove consistency with original legislative intent. But, the Court also ruled (October, 2024) that the EPA's rules to include carbon emissions as a pollutant under the Clean Air Act could stand, pending further review.

[36] The second factor was growing political pressure to further strengthen environmental objectives within the EU's overall policy framework. The Göteborg European Council in June 2001 adopted a sustainable development strategy that put sustainability on the same footing as economic and social objectives and required all European policies to strengthen their contribution to the goal of sustainable development with a particular focus on climate change, transport, public health and natural resources. Thirdly, the attention of policymakers shifted towards areas which offered economic benefits notably in energy, transport, tourism, business development and innovation. The benefits of this investment were considered as indirect in contrast to the more traditional types of environmental investment. (This is based on a typology of classification known as the Rio Markers). As a result of these changes and increases in the overall envelope for Cohesion Policy the total EU support for environmental objectives would double between the 2000 to 2006 and 2014-20 period to around EUR 80bn with a majority of expenditure in investments with indirect benefits. For the 2021-2027 period total support is expected to be close to EUR 100bn, roughly one quarter of the total budget – a significantly higher proportion of the budget compared to the early years of the policy.

[37] Finally, a range of investments were excluded from support Cohesion Policy in order to ensure coherence with environmental and climate objectives. This included firms covered by the ETS directive (notably in energy intensive sectors) as well as investment in the production and processing of fossil fuels.

[38] Key programs have included the Abandoned Mine Land Economic Revitalization Program (created in 2016 with $135 million annually), the Partnerships for Opportunity and Workforce and Economic Revitalization Initiative (POWER) (launched in 2015 with $65 million annually), and the Assistance to Coal Communities program (ongoing with $48 million annually). These initiatives have been administered by institutions such as the ARC, the EDA, and the Office of Surface Mining Reclamation and Enforcement (CRS, 2023).

These programs have suffered from many of the problems associated with the place-based programs for distressed areas, particularly the small and piecemeal amount of funding available, and fragmentation in the design / delivery. An indicative example of this can be seen in the demise of the POWER+ program which was developed by the Obama Administration with the intention of being an integrated and multi-agency strategy aimed at assisting coal mining communities, much of which did not survive the Trump Administration (Cecire, 2019). However, to reduce fragmentation, the Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization, established in 2021, aims to coordinate federal efforts to assist coal communities (CRS, 2023). To date it has had some success in developing a more consistent definition used for identifying the most at risk coal mining communities (CRS, 2023).

[39] Overall, the IRA contains at least $45.95 billion for environmental justice programs, including $10 billion in competitive grants. At about 12% of the IRA and 3.4% of the IRA and IIJA combined, these environmental justice commitments fall short of the Justice40 initiative. Still, it is no small change (Donoghoe et al. 2023). While much of this funding is spatially blind, there are some place-based policies such as the Environmental and Climate Justice Program, with funds of around $3 billion, funds projects and provides technical assistance in disadvantaged communities. Alongside this, the Biden Administration has also developed the Community Disaster Resilience Zones Act, designated $177 million for 17 technical assistance centers to help communities access environmental justice funds. And created the White House Office of Environmental Justice (Donoghoe et al. 2023). These funds are also complemented by executive orders to reform governance structures, including plans to strengthen racial equity and support underserved communities across government agencies.

[40] Driven by the White House early in Biden's Administration the Justice40 Executive Order made it a goal that 40% of the overall benefits of select Federal investments flow to disadvantaged communities that are marginalized by underinvestment and overburdened by pollution.# The investments covered are related to climate change, clean energy and energy efficiency, clean transit, affordable and sustainable housing, training and workforce development, remediation and reduction of legacy pollution, and the development of critical clean water and wastewater infrastructure. As of 2024, three years after its launch, the initiative covered 518 programs across 16 federal agencies (Walls et al. 2024). Alongside the initiative, a 'Climate and Economic Justice Screening Tool', which maps and identifies disadvantaged communities to help federal agencies and local governments identify in-need communities based on vulnerability to climate risk (Donoghoe et al. 2023).

[41] Along with the imprecise geographic targeting, some programs do not address the most pressing environmental or socioeconomic needs of eligible locations. For example, a census tract that qualifies for Justice40 because it has high rates of heart disease and low household incomes does not automatically receive benefits related to public health or income, but instead is prioritized under a set of Justice40 'covered programs'. This includes hundreds of programs, among them carbon capture demonstration projects, recreation investments, and ecosystem restoration. Similarly, the Energy Community Tax Credit Bonus subsidizes clean energy deployment in places where coal mines or power plants have shuttered, but those places may have much more pressing issues with related needs, such as plunging tax revenues or substandard housing (Rami et al. 2024).

Another major issue with some place-based policies, particularly the Energy Community Tax Credit Bonus, is that eligibility varies from year to year, creating uncertainty and deterring investment. Because eligibility is determined based on employment and unemployment data that change each year, the share of the US population that is covered grew from 19% in 2023 to 32% in 2024 (Rami et al. 2024).

Yet another challenge more specifically related to the Justice40 initiative is related to how federal funding programs work. Walls et al. (2024) outline that where federal funding goes to states and other intermediaries in the form of block grants or formula categorical grants, it will be extremely difficult for federal agency staff to ensure that 40% of funds (and benefits) ultimately go to disadvantaged communities. On the other hand, with project categorical grants, where state and local governments and other intermediaries apply for federal funding to pay for specific projects and activities. In these cases, federal agencies have more control over where the money goes, but crucially the ability to direct it to underserved communities depends on how many of those communities apply for funding.

[42] This stands in contrast to competition, customs or trade policy where the EU has an exclusive competence or education and health, where the EU can only support Member States and where legally binding acts at EU level cannot require harmonization of Member State policy. (TFEU article 6) As a result, the setting of rules at EU level leaves space for Member States to act where this is not regulated at EU level. In practice, this means that the Cohesion Policy framework sets detailed rules on how funds are spent but leaves flexibility to Member States to organize implementation structures and investment priorities in line with their institutional

arrangements and internal organization of regional and economic development policies. In practice, means that responsibilities for implementation are shared between the EU, national and regional levels in different configurations accommodating large federal countries like Germany as Italy, as well as small centralized countries such as the Baltics. The implementation of Cohesion Policy can therefore vary significantly between countries.

[43] This is particularly important in distressed areas, where a broad range of different actions can be brought to bear (education, social infrastructure, start-up support, broadband etc.) through a range of different mechanisms.

[44] These mechanisms operate at different levels:

- Implementation at the level of functional or administrative area. This can involve cooperation between different local actors across borders or administrative boundaries.
- Community-led local development (CLLD) involves a strongly participatory approach. It is a tool for involving citizens at the local level in developing responses to social, environmental and economic challenges.
- Sustainable Urban Development - a minimum share of the ERDF allocation (5% in 2014-2020, 8% in 2021-2027) needs to be allocated to tackle the economic, environmental, climate, demographic and social challenges affecting urban areas, while taking into account the need to promote urban-rural linkages.

[45] On the basis of the wide-ranging US empirical evidence, Bartik (2020a) argues that for place-based policies to be successful, there are six key design principles:

1. Place-based policies should focus explicitly on depressed areas
2. Place-based policies should focus on high multiplier industries
3. Place-based policies should not disproportionately favor large firms
4. Place-based policies should focus on the enhanced provision of local business inputs, and local infrastructure and land provision
5. Place-based policies should be a coordinated package of policies tailored to the local context and aimed at building complementarities
6. Place-based policies should be better evaluated using quantifiable selection criteria, thereby permitting the use of techniques such as regression discontinuity design

McCann (2023b) states that these six principles are consistent with the principles of the 2014-2020 reforms to EU Cohesion Policy (McCann, 2015).

[46] Nevertheless, in the context of a small budget of less than 1% of GDP, the contribution to the delivery of European public goods has been an important argument for maintaining a significant budget for Cohesion. Under the Treaty state aid is prohibited under it is justified by reasons of general economic development. There is therefore a strong integration between regional aid criteria and Cohesion policy geographical eligibility. In practice the two policies work in tandem.

[47] However, major crises or changes in economic circumstances such as the COVID pandemic or the Russian invasion of Ukraine may require broader regulatory changes. Stakeholders have signaled this long-term perspective as one of the most important features of the policy, given significant fluctuations in national expenditure.

[48] These changes also included the introduction of a broad range of new conditionalities linked to the “Two-Pack” legislation which improved budgetary coordination and reinforced financial surveillance and the “Six-Pack” legislation which included measures to enforce greater budgetary discipline within the Stability and Growth Pact and a new macroeconomic imbalance procedure. This conditionality also included mechanisms to support the delivery of structural reforms by linking cohesion policy programming to country-specific

recommendations. Macroeconomic conditionality was strongly opposed by the European Parliament and the Committee of the Regions, but agreed as part of the final negotiations on the MFF. (Berkowitz et al. 2016).

[49] The CHIPS Act:

- The CHIPS Act adopts a portfolio approach, allowing all companies, regardless of location, to apply for federal grants, avoiding the selection of a single "national champion." Competition is key to the program's design, aiming to build globally competitive semiconductor clusters and ensuring a fair grant-making process
- Funding extends beyond leading-edge chip manufacturers to support the broader supply chain and regional ecosystems, fostering economies of scale and comprehensive cluster development. The policy goes beyond just building new foundries, aiming for a holistic approach. A uniform tax credit and other financial programs, like loans and loan guarantees, are available to all companies investing in semiconductor production, promoting a level playing field for both large and small firms
- State involvement is crucial, as companies must apply for CHIPS funding with state contributions and incentives that demonstrate local commitment and partnership. Applications are evaluated on the quality and impact of state incentives, such as energy provisions or infrastructure, which can be more valuable than tax breaks. There are over 40 criteria for the largest grants program, with awards guided by national and economic security priorities,
- If recipients fail to meet agreed conditions, they must return the full award amount.

The funding conditionalities reflect the administration's societal values and broader goals, such as creating quality jobs, investing in skills, and limiting corporate benefits. Key requirements include: 1) providing day care for workers; 2) using union labor, paying prevailing wages, and sourcing U.S.-made iron and steel for construction; 3) implementing workforce development plans, including apprenticeships; 4) limiting stock buybacks and dividends for five years after receiving funds; 5) sharing profits with the government in case of windfall gains; and 6) restricting expansion in China for a decade.

[50] There is a theory debate on exactly what the optimal spatial allocation for growth would be, with disagreements about whether the USA or Europe are overly-concentrated or overly-dispersed relative to the productivity-maximizing spatial allocation.

[51] Although an additional constraint in the USA might come from interpersonal income inequality, where the potential for financing territorial redistribution will be sensitive to the inter-personal distribution of any new fiscal burdens, given higher pre-distribution income inequality in the USA as a whole (Chancel, et al)

[52] In making this point we refer to the growing literature on “place effects” on people that are dynamic, biographical, intergenerational (eg Chetty, etc etc). Optimal spatial allocation models have difficulty incorporating these dynamic interpersonal and inter-group effects, as well as political economy effects of spatial inequality (eg political and policy polarization that are growth-reducing).