

# **Beyond smokestack chasing: toward a new typology of subnational investment subsidies in the United States**

**Melike Arslan**

Max Planck Institute for the Study of Societies, Cologne  
Paulstraße 3, 50676 Köln, DE

*Correspondence:* [Melike.arslan@mpifg.de](mailto:Melike.arslan@mpifg.de)

**Chase Foster**

SOAS University of London, School of Finance and Management  
10 Thornhaugh Street, Russell Square, WC1H 0XG London, UK

*Correspondence:* [Chase.foster@soas.ac.uk](mailto:Chase.foster@soas.ac.uk)

**Funding:** The Economic Security Project, Anti-Monopoly Fund Research Grant (2021-2023)

**Acknowledgements:** We thank the Economic Security Project for financial support, John Bradley, Franziska Golibrzuch and Shilpa Ramachandran for their excellent research assistance, and Kathleen Thelen for her generous feedback and comments. We are also grateful to the organizers and participants of the New Thinking in Industrial, Innovation & Technology Policy Conference at Columbia University for helpful discussion.

# **Beyond smokestack chasing: toward a new typology of subnational investment subsidies in the United States**

## **Abstract**

Scholars of industrial policy often characterize location-based investment subsidies as ineffective tools of economic development. We argue that investment subsidies can reflect a variety of state-market logics, including in some cases the use of public authority to steer business investment toward socially valuable purposes. Through extensive empirical analysis of subnational investment subsidy programs and awards in the United States, we first highlight heterogeneity in program design and the intensity of spending across jurisdictions. We then develop a new typology that distinguishes between the market orientation of subsidy programs and the targetedness of subsidy schemes to identify four distinct subsidy types: *laissez-faire*, *beggar-thy-neighbor*, *developmental* and *Pigouvian*. The utility of this framework is illustrated in four state case studies that reflect different prevailing industrial policy logics. In highlighting this heterogeneity, we point to the need to better understand the role of industrial policy at the subnational level.

**SER keywords:** subsidies, economic development, public expenditures, local government, USA

**JEL classification:** O25 industrial policy, H2 taxation, subsidies, and revenue, H72 state and local budget and expenditures

## 1. Introduction

Locational investment subsidies—defined as direct and indirect public subsidies, tax breaks and other financial benefits provided to business enterprises in exchange for private investment—have significantly increased in the U.S. in recent decades (Jansa and Gray, 2017). State and city governments now provide firms with as much as \$90B of incentives each year, nearly quadruple the real dollar amount spent in the 1980s (Bartik, 2017). The largest of these investment deals regularly grab headlines, such as when Amazon, Ford, and Nike each received \$2 billion or more in awards from the states of New York, Michigan, and Oregon, respectively.

Although investment incentives have long represented one of the most expensive and developed instruments of state and local economic policy, they have not been a major focus of the industrial policy literatures in comparative political economy (Bulfone, 2023) or economic sociology (Dobbin, 2005). Separate literatures in economics and political science have provided extensive empirical insight into the economic and social effects of subsidy programs as well as their relationship to the electoral cycle (e.g., Bartik, 1992; Jansa, 2020; Jensen and Malesky, 2018; Slattery, 2022). However, the more theoretically-oriented institutionalist literature has either ignored subnational industrial policy schemes (Block, 2008; Kattel and Mazzucato, 2018) or characterized them as instances of “corporate welfare” (Bulfone et al., 2023), “smoke stack chasing” (Grant and Hutchinson, 1996) or “supply-side” inducements (Eisinger, 1988) that should be distinguished from the policies of a partially autonomous entrepreneurial state that steers the economy toward the values and interests of a bounded political community (Evans, 1995). While an accurate description of many subsidy programs, smoke stack chasing accounts tend to obscure important sources of variation—both within and across states—in the design of programs and the actual use of investment incentives. We are thus lacking a clear understanding of their varying

socio-economic purposes and functions, and the implications these differences have for the political economy of industrial policy.

In this article, we build an empirically grounded, typological theory that accounts for the heterogeneity of investment subsidy programs and awards within and across the U.S. states. Our novel framework conceptualizes the varying state-market logics that underpin subsidy schemes in terms of the state's differing role shaping private business decisions and targeting particular industries, firms, or technologies. We recognize that the organization of American federalism leads all subnational governments to be vulnerable to capital flight and business' structural power; however, we assert that states can and do respond to this vulnerability in different ways. Our tractable framework both improves upon existing theories while also enabling further empirical investigation into the causes and consequences of these policies.

In making these distinctions, we build upon a long social scientific tradition of using typological theory informed by in-depth case studies to better understand an important public problem. As noted by leading methodologists in this tradition, a rich and complete descriptive account of individual cases, which conceptualizes the most important dimensions of a social phenomenon, can be superior to other methods for the task of theory construction (Stinchcombe, 1987; Walton, 1992). Here, our aim is to identify *how* subsidy logics differ (typological theory) rather than *why* different strategies emerge (causal theory). Therefore, we rely on extreme cases to build "ideal types", i.e., pure and complete examples of a given concept (Goertz and Mahoney, 2013, pp. 113 & 169). We suggest our typology is useful to organize the complex reality of subsidy policies in the U.S. by utilizing the measurement of proximity, or family resemblance, of each case to these ideal types. This approach is justified given the paucity of current research on the variable logics of subnational investment schemes.

We first differentiate between *market-conforming subsidies* that seek to promote growth by reducing production factor costs without interfering with market signals or private firm autonomy, and *market-shaping subsidies* that promote growth by inducing firms to develop higher value-added products or services and shifting market signals to reflect socially valuable goals. We distinguish further between *horizontally-focused subsidies* that are targeted at a wide range of firms and sectors and *vertically focused subsidies* that aim to support specific firms, sectors, or technologies. The combination of these two dimensions produces four ideal-typical locational investment incentives: *Laissez-faire*, *beggar-thy-neighbor*, *developmental* and *Pigouvian*. These categories can be applied to analyze subsidy variation at three different levels: individual award decisions, incentive programs, and state subsidy policies.

We illustrate the utility of our typological theory by empirically examining subsidy programs in four states: South Dakota, Alabama, Michigan, and California. For each, we combine a qualitative analysis of subsidy program design with a quantitative analysis of available data on individual subsidy awards. Although these states have diverse political economies, we show that differing subsidy logics often co-exist in a single state. But even as each state exhibits a degree of heterogeneity, it is also usually possible to identify certain prevailing logics that inform broader investment subsidy design.

In what follows, we begin by providing a brief overview of economic development policy at the state and local level, which has been deeply shaped by the distinctive design of American federalism. We then review the existing literature, pointing to the tendency of scholars to paint subnational investment incentives with an overly broad brush, in part because of data limitations. Analyzing extensive subsidy data, we highlight the heterogeneity of subsidy programs and subsidy awards across states. This is followed by the introduction of a new typology that accounts for this

variation as well as empirical illustrations of how this typology can be used to better conceptualize the industrial policies found in four politically and economically diverse states. A conclusion discusses the implications of our analysis and the need for more extensive study of industrial policy at the subnational level.

## **2. Locational Investment Incentives as Industrial Policy**

Industrial policy, defined as “the use of public powers to actively shape markets for the interests and values of a bounded political community, in ways that overtly represent the government’s interventionist role”, constitutes a central feature of the state-market nexus in capitalist political economies (McNamara, 2023, p. 2). Historically, the state has played an indispensable role both in initiating industrialization processes and directing their development (Gerschenkron, 2015 [1962]) as well as managing the many externalities and social inequalities generated by market economies (Polanyi, 1957 [1944]). While this role has varied in important ways across time and space, in virtually all capitalist societies the state continues to play a market steering and shaping function, even if in recent times this role takes more ‘indirect’ (Thatcher, 2014), ‘hidden’ (Block, 2008), and ‘liberal’ (Bulfone, 2020) forms.

In the United States, subnational governments (states, counties, municipalities) have long played important industrial policy roles largely thanks to the country’s decentralized political configuration. The original American constitutional settlement empowered states with more extensive taxation and regulatory power than the federal government, setting them up to spearhead industrial projects during the 18<sup>th</sup> and 19<sup>th</sup> centuries (John, 1997; Lindberg and Campbell, 1991). The Supreme Court’s interpretation of the Commerce Clause of the U.S. Constitution allowed states to directly compete for capital investments, while simultaneously establishing national market rules that limited federal or state efforts to restrain interstate competition (Thomas, 2010).

This court-constructed model of federalism made subnational governments particularly vulnerable to the economic pressures of footloose investors (Jenkins et al., 2006), which at times spurred a race-to-the-bottom in tax, regulation and welfare policy (Hacker and Pierson, 2002; Thomas, 2012). As a part of these broader dynamics, all 50 states and thousands of local governments have developed *locational or place-based investment incentives* to attract particular kinds of private investments within their jurisdictions.

Taking the form of property, sales, and income tax credits and rebates, tax abatements, bonds, grants, cost reimbursements, and infrastructure assistance, locational incentives were originally designed to bolster economic investment by lowering input production factor costs and offsetting the perceived disadvantages of a location (Jenkins et al., 2006). First used by the Southern states to entice industrial firms to move production out of northern states (LeRoy, 2005), the systematic and heightened use of such incentives can be traced to the 1970s and 1980s in response to escalating unemployment, new competitiveness challenges under economic globalization (Graham, 1992), the fragmentation of firms along vertical lines and the broader spatial dispersion of labor (Markusen and Nesse, 2007), and the precipitous decline of federal revenue-sharing with states (Taylor, 1993). With each recession and economic downturn, state and local governments have escalated their spending on investment incentives.

The explosion of subsidy programs and deals has inspired an extensive empirical literature on their causes and consequences. Economists have mainly sought to evaluate the effectiveness of investment incentives as tools of economic development, measured in terms of general economic growth (Bartik, 1992; Buss, 2001), foreign direct investment levels (Bobonis and Shatz, 2007), unemployment rates (Bartik, 1993; Goss and Phillips, 1994), increases in tax revenue (Bartik, 1991), and the reduction in poverty or inequality (Jansa, 2020; Wang et al., 2018). These studies

generally find that incentives are *ineffective* tools of economic development. Not only are subsidies a small factor in firms' investment decisions, but most subsidies go to companies that arguably would have made the same investment decisions without them (Bartik, 2019).

Political scientists and sociologists, for their part, have investigated how investment subsidy decisions are shaped by politicians' own electoral incentives (Slattery, 2022; Sobel et al., 2022; Rickard, 2018) and economic interest groups' political influence (Jansa and Gray, 2017; Jenkins et al., 2006; Logan and Molotch, 2007). These studies have concluded that investment subsidies are "electoral pandering" tools that politicians use to boost their re-election chances (Jensen and Malesky, 2018; Slattery and Zidar, 2020). Empirical studies show that locational subsidy decisions track local electoral cycles and target specific subsets of the electorate (Jensen et al., 2015).

Although these studies have done much to advance our understanding of how subsidy programs work in practice, our theoretical understanding of investment incentives has fallen behind this progress. Much of the existing literature assumes, implicitly or explicitly, that subnational investment subsidies embody a single economic or political logic. In investigating the average consequences or causes of locational investment incentives, most studies take for granted the functional equivalence of a diverse array of subsidy programs. Whether they support the construction of a factory or commercial housing development, focus on transforming local capacities or recruiting foreign firms, finance the construction of a retail complex or support research and development, investment subsidy programs are often painted with the same broad brush.

This points to a related problem in the literature, which is its privileging of a diachronic perspective that views subsidy programs as evolving in a single direction over time. In one of the



earliest accounts of the rise of subnational developmental policy, Eisinger (1988) argues that state developmental policy has gradually shifted from supply-side (locational) strategies that minimize state influence over investment to demand-side (entrepreneurial) strategies characterized by state steering. As state and local governments increasingly played more entrepreneurial roles, he predicted investment incentive programs—which he characterizes as supply-side strategies that minimize state steering—would become a thing of the past.

An alternative diachronic account has been recently proposed by Bulfone, Ergen and Kalatzake (2023), who argue that economic development policies in most countries have shifted from “industrial planning” to “corporate welfare” as capitalist systems have evolved from Fordist to post-Fordist modes of accumulation. While in the Fordist era, the transfer of public resources to private enterprises included substantial conditionalities, in the post-Fordist era such transfers often lack any conditions, underscoring how states have become “routine service providers without significant leverage to influence corporate decision-making” (17). Thus, they argue, today most U.S. locational investment incentives are nonconditional corporate welfare, since “there is no systematic qualitative evidence that American incentive schemes were ever systematically tied to performance metrics, benchmarking regimes, or other forms of strong conditionality.” In a direct counter to Eisinger’s prediction, they contend that it is entrepreneurial, demand-side policies that have waned and “local beggar-thy-neighbor policy toolkits” that have gained prevalence over time.

While these accounts provide valuable insights into the evolving nature of state-business relations, their analyses do not encapsulate the full complexity of subsidy schemes. First, in both narratives, a majority of investment incentives are categorized in a single category that hinges on the assumption that such programs involve a minimal state steering function. However, it is crucial to acknowledge that investment subsidies can concurrently attract and retain mobile capital while

providing local governments and states with varying levels and types of control over private investment decisions.

Second, both perspectives depict a convergence in economic development policies over time. While plausible, this depiction disregards the well-established principle in comparative political economy that neither policy diffusion nor system-wide shifts in capitalism necessarily leads to policy convergence. On the contrary, these dynamics can drive policy diversification, as states differentially respond to policy diffusion pressures (Teubner, 2001) or common secular economic developments (Hall and Soskice, 2001; Thelen, 2014). In the case of investment incentives, we can therefore expect that shifts in the structural power of business can prompt an expansion in the repertoire of subsidy mechanisms, with national and sub-national governments strategically diversifying their subsidy portfolios or leveraging differing subsidy programs to gain competitive advantages over each other. This strategic diversification not only allows them to secure competitive positions but also enables them to customize their programs to align with their distinct objectives and economic ideologies.

Some of the problems in the literature clearly stem from data limitations. Previous cross-state measures of development incentives included either simple counts of the number of programs or awards, or the total value of incentives offered by a state, both of which were often derived from National Association of State Development Officers (NASDA) reports. A more reliable and detailed database, the Panel Database on Incentives and Taxes (PDIT), extrapolates the value of an incentive based on the added value of a hypothetical firm within a specific industry, state, and year (Bartik, 2017). However, the PDIT estimates do not provide individual award data. We instead used a dataset compiled by Good Jobs First (GJF), a non-profit that promotes corporate and governmental transparency in economic development. Based on two decades of data aggregation

from government reports, independent academic studies, information requests and news articles, this database includes information about more than 600,000 subsidies awarded by all fifty states and several thousand municipalities. While it is not comprehensive, it nevertheless represents the best publicly available information source on individual subsidy awards and is therefore useful for exploring variation. More information on the data being used, as well as the caution needed when using it, is available in the online appendix.

As we will illustrate in the next section, subsidy programs and awards vary both within and across U.S. states. This includes the number, the level, and the type of subsidies that are awarded as well as the intensity of subsidy spending across jurisdictions. While many other studies using this data have also identified important sources of variation (e.g. Jansa, 2020; Jansa and Gray, 2017; Slattery and Zidar, 2020; Wang et al., 2018), they have focused mainly on quantitative variation in subsidy spending rather than qualitative variation in subsidy types. We instead offer a theoretical way to understand this heterogeneity.

### **3. Varieties of investment subsidies**

From 2000 to 2022, state governments provided at least \$238B (in 2022 dollars) worth of subsidies to private companies through investment programs. These awards stemmed from 743 different programs, administered through 431 different agencies operating in 50 states plus the District of Columbia. All in all, at least 135,403 different entities (either parent companies or subsidiaries) received a subsidy of some kind from a state-level agency. This included support for companies operating in natural resources and mining, manufacturing, construction, utilities, wholesale trade, transportation and warehousing, leisure and hospitality, and information services.

<Figures 1 and 2 about here>

As can be seen in Figure 1, which breaks down the dollars awarded by subsidy type, investment incentives were provided through a wide range of instruments. Tax expenditures—which cover property tax abatements, sales tax exemptions, tax credits and rebates, as well as fee waivers—were the most common instruments, accounting for 62% of total expenditures. Substantial benefits were also provided through enterprise zones that offer companies operating in certain areas with lower taxes as well as public grants and cost reimbursements.

Clear differences also exist in the size of subsidies. More than 200,000 subsidy awards were provided with a value of less than \$50,000. However, in terms of total dollar value, the small number of large multi-million-dollar awards dwarfs the other categories. As can be seen in Figure 2, a majority of total spending was provided through subsidy deals valued at \$50M or more. We can also see that the intensity of subsidy spending differs systematically across states. While all states provided investment subsidies of some kind, these differed in terms of the number of programs, the average subsidy size, and the overall level of spending. Figure 3 provides the average subsidy spending from 2000-2022 per \$1M of state GDP. Some states, such as Hawaii barely spent anything at all on investment incentive programs. By contrast, the level of subsidies in other states such as Louisiana constituted one half percent of the state's GDP in an average year.

The diversity of subsidy schemes can also be seen in a more granular assessment of more than 400 of the largest subsidy awards (“megadeals”), each valued at \$50M or more (in unadjusted dollars). Over the last twenty years, states have spent a total of \$96B on these deals. Some states had dozens of these deals, others just a few, a handful no megadeals at all. The purpose of these programs also systematically varied. As can be seen in Figure 4, 57% of large awards financed

<Figures 3 and 4 about here>

the construction of a production facility, often a factory of some kind. However, the remaining awards were allocated to a diverse array of activities, including research-related facilities (13%) retail or entertainment businesses (9%), real estate projects (7%), shipping and distribution centers (7%), and data centers (4%). We also see different patterns of interstate competition. In just over half of the deals, companies explicitly considered multiple sites; however, in the other half, such considerations were not publicly stated (at least to the press). And while 14% of large deals involved the relocation of a facility from one state to another, a greater number were aimed at retaining already existing jobs (21%) or expanding the capacities of existing facilities (32%).

It is also notable that many of the deals purported to be aimed at broader social purposes. A third of the deals included state infrastructure spending and more than a quarter involved public subsidies for worker training or skills upgrading. 10% of megadeals were aimed at R&D and 5% to energy transition or environmental cleanup. Additionally, a significant number were either tied to a new “infant industry” in the state or coherent agglomeration strategy. Although these expenditures were usually tailored to company needs, in many cases they also had clear benefits for the community as a whole. Our data does not allow us to evaluate the effectiveness of these programs; nonetheless, it is notable that the vast majority (85%) of facilities were still operational in 2023, suggesting that the deals produced durable effects. The diversity of projects we observe in the megadeals data suggests not only that differing strategic logics may underpin subsidy schemes, but also that states may systematically use subsidy programs in different ways.

#### 4. Toward a typological theory of investment subsidies

To better understand the heterogeneity described in the previous section, we develop a typological theory that conceptualizes variation across states and programs from the standpoint of established institutionalist theory (George and Bennett, 2005, pp. 233–262). In developing our typology, we draw inspiration from earlier work that emphasizes how economic development policy can and does entail different degrees of state direction over business investment decisions. Like Eisinger (1988), we differentiate between policies that follow a market conforming logic and those that follow a market shaping logic (or to use his terminology, policies that aim at ‘supply side’ change versus policies that are more ‘demand-focused’). However, we also add a second dimension. We combine differences in the market orientation of a subsidy program with the traditional industrial policy distinction between ‘horizontal’ programs that are available to a wide number of firms and sectors and ‘vertical’ programs that are targeted at select firms, narrow sectors and specific technologies (Rodrik, 2004; Warwick, 2013).

The first dimension aligns with the existing literature and encompasses the market orientation of a subsidy program or an individual subsidy award. *Market-conforming subsidies* are designed to stimulate investment and job creation within a specific jurisdiction without impinging upon the autonomy of capitalist enterprises or the external market cues that guide business choices regarding product lines, production methods, and technological approaches. Their ostensible purpose is to entice established companies by providing incentives that lower the cost of factors of production such as capital, land, and labor, achieved through mechanisms like reduced tax rates, tax abatements, or publicly funded initiatives. The underlying economic rationale for these subsidies is rooted in the belief that private enterprises are better equipped to make sound investment decisions compared to the state, which should play a subordinate role.

However, not all investment incentives are market-conforming. Some are instead *market-shaping*, which means, they not only lower production factor costs, but also direct investment decisions toward socially valuable ends. These can include traditional market-correcting aims that encourage firms to invest in economic areas that are undersupplied by the market. They can also include programs that aim to promote particular firms, sectors, or new technologies through interventions that provide firms with incentives to develop new technologies or higher value-added products. Market-shaping investment incentives reflect a higher level of activism by the state in guiding investment decisions in either the setting of long-term goals or the steering of firm strategy and market signals (Brace, 1994).

While market-shaping policies are often associated with top-down directives where the state singles out ‘national champions’, these policies are not invariably orchestrated by top-level decision-makers. At times, they are instead formulated through legal frameworks or technocratic mechanisms that do not differentiate between various firms. This duality is also present in market-conforming policies; although they are frequently perceived as passive strategies, seemingly devoid of strategic economic deliberation, market-conforming subsidies can also manifest a significant degree of state engagement and planning (Stokan, 2013).

To encompass these diverse manifestations, we have therefore introduced a second dimension indicating the focus (or targetedness) of subsidy programs. *Vertical subsidy schemes* seek to alter the relative importance of particular industries and firms in the economy through tax credits, grant, or reimbursements that are selectively provided to particular companies or narrow sectors. *Horizontal subsidy schemes*, by contrast, are available to a wide array of industries and companies. Typically taking the shape of tax reductions automatically extended to all firms or sectors, or grant programs open to a wide spectrum of firms, horizontal schemes find use in both

<Table 1 about here>

market-conforming initiatives that trim production factor costs like land, labor, and capital, as well as market-shaping endeavors that address market externalities or steer the market towards broader societal objectives (Warwick, 2013).

The intersection of these two dimensions yields four combinations of locational investment incentives, as summarized in Table 1. On the vertical axis, subsidy schemes span from market-conforming policies aimed at reducing production factor costs to market-shaping policies designed to foster growth through active intervention in the local market for goods and services. On the horizontal axis, policy spans from horizontal investment incentives accessible to a wide range of sectors and companies, to vertical investment incentives directed at specific industries, technologies, or firms. The combination of these two dimensions allows us to conceptualize four ideal-typical investment subsidies.

*Laissez-faire investment subsidies* are both market-conforming in their orientation and horizontal in their targets. These subsidies are not designed to motivate private entrepreneurs towards particular economic activities or products, and they refrain from singling out specific companies or industries for targeted economic development. Their objective, instead, centers on the reduction of general business input costs, encompassing elements like energy, labor, and operational expenditures. Although the state's role in economic development is subdued, *laissez-faire* policies are still investment subsidies since they reduce business expenses by forcing other economic actors—such as consumers or property owners—to finance the cost of government.

The economic rationale underlying *laissez-faire* subsidies is grounded in the belief that the “free market” possesses the optimal capacity to identify sectors and firms that can ensure the



efficient allocation of resources. Thus, the government's role should be minimal, mainly focused on establishing fundamental infrastructure (like property rights, contract enforcement, and public order) to facilitate the unimpeded operation of markets and to insulate it from democratic redistributive pressures. Typical laissez-faire investment incentives are broad-based tax credit or abatement programs that seek to lower production factor costs through programs that are available to all enterprises. In its most radical form, a laissez-faire subsidy framework does not include investment subsidies, as corporate taxes are already positioned at zero. In the United States, examples can be found in states such as South Dakota and Wyoming, which rely primarily on low business taxes and strict property rights to attract capital and encourage business relocation and provide relatively few discretionary subsidies that target particular firms.

*Beggar-thy-neighbor subsidies* are also designed to mitigate supply-side production factor costs without impinging on the decision-making processes of businesses or reshaping the markets in which these firms operate. However, unlike the horizontal focus of laissez-faire subsidies, these subsidies follow a vertical approach, extending benefits primarily to specific types of firms, sectors, or technologies that are seen as especially beneficial. While the state assumes a more active role in economic development than with laissez-faire subsidies, this role is still limited to attracting or retaining mobile capital within particular sectors by subsidizing the costs of production specific to those sectors.

The underlying economic rationale behind beggar-thy-neighbor subsidies is that states can achieve more economic development for the resources they spend by tailoring their subsidies to select firms that yield higher multipliers—or spillover effects—on the local economy. This includes the creation of demand for local suppliers and the attraction of associated firms. As such, beggar-thy-neighbor subsidies commonly target larger companies, given their anticipated higher

multipliers (Bartik, 2020; Slattery and Zidar, 2020). These policies can also aim to produce agglomeration effects, understood as the beneficial geographic clustering of various businesses—producers, suppliers, and related providers—associated with a particular industry (Juhász et al., 2023). Toward this end, individual members of industries clustered elsewhere are often targeted, with the expectation that the recruitment of one member will serve as an impetus for other members to follow (Bartik, 2019). However, because states with similar factor endowments are competing for the same mobile investments, successful recruitment often incites a “race-to-the-bottom” competition between states, potentially leading to an upward spiral in state spending.

Much like beggar-thy-neighbor subsidies, *developmental subsidies* are also focused on specific sectors, firms, or technologies that the state recognizes as strategically significant. However, developmental subsidies are not designed to simply reduce input costs, enabling businesses to achieve self-determined objectives. Instead, they are meant to encourage companies to pursue aims they might not otherwise be inclined or capable of undertaking. In this context, developmental subsidies align closely with what scholars have referred to as the “entrepreneurial state” (Mazzucato, 2013; Eisinger, 1988). Like a venture capitalist, the state identifies new markets ripe for development or nurtures the progression of specific products, processes, or technologies. This involvement inherently carries a higher level of risk compared to beggar-thy-neighbor subsidies, which often target established companies or proven products and technologies.

The rationale behind developmental subsidies is that the private sector frequently overlooks potentially advantageous investment prospects that the state is better equipped to leverage. This is particularly pertinent for investments that could yield the development and commercialization of innovative, untested approaches, or facilitate structural transformations within specific industries or the economy at large. Such endeavors necessitate sustained coordination and substantial

financial backing over the long term, which the private sector might not be optimally positioned to explore. At the same time, developmental subsidies operate under the premise that the state's direct involvement in these ventures should be avoided to mitigate the risks of inefficiencies and clientelism. Thus, the state assumes a vested interest in the success of private enterprises without directly assuming control. An example would be Michigan's Office of Future Mobility and Electrification, which supports the development of electric vehicles, particularly at its largest companies, General Motors, and Ford.

*Pigouvian subsidies* aim to transform the market for goods and services without targeting particular firms or sectors. Named after the 19<sup>th</sup> century economist Arthur Cecil Pigou who argued that the state could effectively address market failures through taxation, Pigouvian subsidies encourage investments that correct for the externalities created by markets or steer investment toward socially valuable purposes that would not otherwise be created by private actors' own economic incentives. However, since Pigouvian subsidies do not target particular firms, sectors or technologies, their benefit is available to a large set of businesses and industries.

The logic of Pigouvian subsidies is that economic growth will be generated if the state encourages private investments that address market externalities and benefit society as a whole. But while the state is capable of identifying and addressing market failures and other clearly defined societal problems that in principle can be found in a wide range of firms and industries, it is less able to appropriately identify the technologies, firms or industries that are likely to be important in the future. Thus, Pigouvian subsidies strictly avoid vertical initiatives that target particular firms and narrow sectors, focusing instead on broad-based problems such as pollution reduction, R&D production, or the transformation of distressed economic areas through horizontal

programs. A good example is California's R&D tax credit, which subsidizes the cost of research through programs that are available to a broad array of research-intensive firms.

## **5. Subsidy programs in practice: four examples**

To illustrate the potential applicability of our theoretical framework, we conduct case studies of economic development policy in four states that exhibit both economic and regional diversity: South Dakota, Alabama, Michigan, and California. We selected these cases as extreme (deviant) cases on each axis of our typology (market orientation and targetedness) based on the subsidy amount and type variations we observed in our megadeals dataset, as well as our own knowledge on state subsidy policy variations from the secondary literature. While problematic in causal research design, the selection of extreme cases is most useful when building typological theories through "ideal types" (Goertz and Mahoney, 2013, pp. 113 & 169). To develop our case studies, we draw from both available secondary literature as well as our own original coding of each state's largest subsidy deals ("megadeals") and most important subsidy programs. More information on the data and methods is available in the online appendix.

### *5.1 South Dakota's quest to become a global tax haven*

South Dakota is a predominantly rural state where agricultural industries such as cattle, corn, maize, soybeans, wheat, and hogs constitute nearly a quarter of GDP. The state also has strengths in agriculture-adjacent areas such as meatpacking and ethanol production as well as tourism and finance. Since the 1970's, South Dakotan officials have sought to foster economic development through policies that combine reduced taxation and business regulation with bolstered protections for property rights that insulate capital from democratic accountability. Since

<Table 2 about here>

business owners pay no corporate or person income tax and are eligible for additional property tax abatement in exchange for investment, the South Dakota case is an illustrate example of a *laissez-faire* approach to industrial development.

The emergence of this strategy can be traced to the 1970's, when the state responded to economic problems by pursuing a deregulatory strategy aimed at attracting financial capital into the state. In 1981, South Dakota's governor abolished anti-usury laws that regulated bank interest rates, in exchange for Citibank moving its credit card business to Sioux Falls.<sup>i</sup> In 1983, South Dakota became the first state to allow "perpetual trusts," a type of financial account used to shield intergenerational wealth transfers from taxation. In response to regulatory competition from other states, the state legislature enacted a range of legal innovations in the 1990s that help the wealthy shield their assets from foreign governments, taxes, and even creditors and foreign spouses. Together with its zero-tax rate for corporations and individuals, South Dakota's deregulatory strategy fostered not only a disproportionately large financial sector for a rural state, but also one of the world's largest tax havens.<sup>ii</sup>

Considering that South Dakota assesses so few taxes, it is hardly surprising that the state has not established extensive investment subsidy programs or pursued high-profile relocation deals through public grants or tax credits. In our megadeals dataset, South Dakota was one of just seven states where no large subsidy award had been provided. As can be seen in Table 2, the state's handful of state investment subsidy programs are mostly horizontal and market-conforming. Programs such as the Reinvestment Payment Program and the South Dakota Jobs Program reimburses sales and use taxes for new investments for a wide range of qualifying firms. South

Dakota also has several small business loan programs that provide start-up funds to firms that are relocating or expanding in the state, or that need working capital or interim financing.

There are of course exceptions to the broader pattern. While the bulk of South Dakota's spending is on market-conforming tax expenditures, the state has created a few smaller programs that contain market-shaping elements. For instance, a training subsidy program partially reimburses training costs for jobs that meet certain standards and an internship subsidy program provides small grants to support internships in STEM fields. Furthermore, like other midwestern states, South Dakota provides some vertical support to its most important sector: agriculture. For instance, in 2014, the state spent \$53M on programs such as the Agricultural Experiment Station and the Soybean Research and Promotion Council that are aimed at supporting the development of the sector through research and technology diffusion or expanding the external demand for South Dakota's agricultural exports.<sup>iii</sup> Although such programs arguably remain relatively marginal within the broader *laissez-faire* developmental scheme, they indicate that even the most libertarian states still retain market shaping and vertical policies.

### *5.2 Alabama's strategic recruitment of foreign manufacturers*

Like many southern states, Alabama has long promoted industrial development by incentivizing established manufacturing companies to relocate to the state. Alongside Mississippi, Alabama developed one of the earliest bond financing programs for development (Mohr, 2018; Cobb, 1993). By the 1960's, public bonds had supported the construction of several hundred plants in low and semi-skilled sectors, particularly in the tire, food processing, and textile and garment industries (Cobb, 1993, pp. 220–221). Like most other southern states, the strategy relied heavily on what is pejoratively called “smokestack chasing”: recruiting industrial firms from other states

through the twin promise of public subsidies and a market-conforming (including anti-union) regulatory landscape.

Traditionally, such programs were in principle horizontal: municipal bond financing was widely available to a range of manufacturing firms and there was no systematic effort by the state to target specific sectors or technologies. This changed in the 1990s when Alabama began to use subsidy programs to recruit specific firms operating in narrowly defined sectors. A watershed moment was in 1993 when Mercedes Benz chose to construct its first North American auto assembly plant in Tuscaloosa, Alabama, after considering proposals for 100 different sites in 35 different states (Mahtesian, 1994). For the construction of a plant that promised the creation of 1,500 jobs, the German automaker received more than \$300M, the bulk of which was through public grants. The state of Alabama agreed to finance the entire cost of land purchasing, construction and equipment procurement as well as all expenses related to workforce development and training for five years (Mohr, 2018, pp. 86–93).

To secure this package, the state legislature enacted a series of new laws that came to be known as the “Mercedes-Benz legislation”, which granted discretionary power to the State Industrial Development Authority to issue public bonds and provide tax abatements to recruit select companies in particular sectors (Mohr, 2018, pp. 100–03). This was followed by the development of an industrial policy strategy by a consortium of state agencies. Entitled “Vision Alabama: A Plan for Quality Growth,” the plan had clear vertical components, including the targeting of key high-tech sectors such as automobile, aerospace, advanced materials, and microelectronics manufacturing (Mohr, 2018, pp. 103–111). The goal of fostering a high-tech economy was not to be pursued primarily by cultivating the resources of local companies and new startups or identifying new markets or technologies, but rather by inducing established high-tech

<Table 3 about here>

companies, usually located in foreign jurisdictions, to relocate to or expand within the state (Eisinger, 1988, pp. 228–232). The state government would now play a more proactive role in recruiting firms and financing customized infrastructure, but it would eschew steering private investment decisions towards specific outcomes. In this way, the plan would not deviate from the state’s longstanding market-conforming strategy.

As can be seen in Table 3, nearly all of Alabama’s megadeals and major programs reflect the logic of *beggar-thy-neighbor* subsidies. Although the sweetheart Mercedes package proved politically unpopular, costing the incumbent governor his re-election, it was nevertheless followed by a number of similarly constructed big deals that offered foreign manufacturing firms large packages composed of tax breaks, public grants, and customized infrastructure support to move into the state. These include a number of large subsidies to automobile manufacturers: \$158M to Honda to create a plant in 1999, \$234M to Hyundai to open a plant in 2002, and \$900M to Toyota to open a Mazda plant in 2018. It also includes large deals for foreign manufacturers to set up plants for steel, chemicals, and aerospace. All in all, Alabama has spent \$4.2B since 1993 on large industrial recruitment deals, at an average cost of \$361,000 per job. While many of these deals required companies to meet certain performance standards in terms of job creation, state officials generally avoided steering business decisions in ways that would address market failures or broader social goals. Indeed, at times state officials have actively suppressed efforts by other stakeholders to make grants conditional on social objectives such as hiring a diverse workforce, or mandating the unionization of factories constructed with state support.<sup>iv</sup>



### *5.3 Michigan's attempt at transformational reindustrialization*

The birthplace of General Motors, Ford and Chrysler, Michigan has long had an economy strongly dependent on the auto industry. However, in the face of intensified competition from Japanese and German auto exports, the industry began a steady decline in the 1960s. In response to these structural shifts, the state embarked on a dual-pronged strategy. The first strategy involved the creation of extensive market-conforming subsidy programs, encompassing both vertical and horizontal approaches, devised to curtail capital investment costs and to safeguard manufacturing sector jobs. The second strategy involved targeted market-shaping subsidies aiming to diversify the local economy by generating non-manufacturing sector jobs and to elevate the existing manufacturing base toward more technologically advanced and higher-value-added products. Thus, the Michigan case serves as a prime example of both the utilization of vertical, market-shaping subsidies for specific economic development goals, and the integration of these strategies with more conventional market-conforming strategies.

The oldest active subsidy initiative in the state is a market-conforming tool: the Industrial Facilities Tax (IFT) abatement program. Created in 1974 with the intent of encouraging manufacturing companies to reinvest in their existing Michigan operations instead of relocating to alternative states or foreign countries, the program allows eligible recipients to substitute their property taxes for a special industrial property tax, which can reduce tax payments by 50% for up to 12 years. During its first thirty years, over 40% of Michigan's local governments used the program, amassing a total of 18,600 tax abatements (Reese, 2014). However, the program's use tapered off over time, with fewer businesses seeking inclusion in recent years (Sands and Reese, 2009).

<Tables 4 and 5 about here>

At the same time, Michigan was also at the forefront of pioneering market-shaping strategies as one of the first states to direct a portion of public employee retirement funds toward investment in high tech start-ups (Eisinger, 1988, pp. 256–261). This market-shaping approach gained momentum with the establishment of the Michigan Strategic Fund in 1984 which assisted the diversification of Michigan's economic landscape by providing funding to startups across different stages of the business lifecycle. By 1986, Michigan had invested around \$172 million directly into 31 high-growth enterprises and indirectly through 16 private venture capital firms (Ibid). In addition, the state established university-industry research centers, like the Michigan Industrial Technology Institute at the University of Michigan, as conduits for the integration of scientific research with the development of commercially viable products (Eisinger, 1988, pp. 283–285).

Michigan introduced more market-conforming strategies in the 1990s. In 1994, voters agreed to cut property taxes by \$3.3 billion and raise sales tax by 50%, significantly lowering the cost of owning property in the state (Viventi, 2001). Simultaneously, in 1995, the state established a new incentive program to support large firms with high economic multipliers, primarily within the manufacturing sector, administered by the Michigan Economic Growth Authority (MEGA) (Hicks and LaFaive, 2011). Between 1995 and 2006, a total of 299 MEGA projects collectively secured approximately \$2 billion in subsidies, the bulk of which we classify as market conforming (Anderson et al., 2010). Table 4 shows an example of the nominal state expenditures allocated to these programs in fiscal year 2008.

With the extensive use of these market-friendly programs, Michigan's national ranking in Site Selection's major business investment database rose sharply from 22nd in 1994 to 6th in 1996, and 1st from 1997 to 2000 (Loveridge and Nizalov, 2007). Nevertheless, Michigan's income per capita continued to decline relative to the nation. Entering the early 2000s, Michigan had one of the highest unemployment rates in the nation. The clear failure of market-confirming strategies to amend these economic and social problems led the state to overhaul its programs. The creation of new RZs ended in 2002 and MEGA programs were discontinued in 2011 (LaFaive et al., 2020).

Starting in the early 2000s, Michigan opted for a more entrepreneurial stance, prioritizing vertical, market-shaping programs. Most importantly, amendments to the Michigan Strategic Fund Act in 2006 created the 21st Century Jobs Trust Fund, dedicated to catalyzing the growth of technology start-up companies, increasing the availability of risk capital, and fostering the commercialization of new products, processes, and services (TEconomy, 2016). Between 2006 and 2010, the state allocated \$470 million to this fund, which was disbursed through a range of specialized programs, each catering to distinct facets of the entrepreneurial ecosystem (Michigan Strategic Fund, 2010). For instance, the Competitive Edge Technology Grants and Loans initiative extended support to entities operating in "competitive edge" arenas such as life sciences, high-tech manufacturing, and the defense industry. Meanwhile, the Michigan Supplier Diversification Fund, aimed to incentivize car manufacturers to develop fresh technologies, products, and customer bases and to help the industry transition into burgeoning markets like alternative energy (LaFaive et al., 2020). This comprehensive suite of market-shaping programs contributed to Michigan's substantial growth in start-up activity and venture capital investments in the last two decades (TEconomy, 2016).

In addition, Michigan strategically harnessed its general programs to fuel the production of environmentally sustainable energy structures like solar panels, wind turbines, as well as the establishment of electric vehicle and battery factories. In 2007, the Michigan Economic Development Corporation (MEDC), which took the reins from MEGA, identified advanced battery technology, wind energy, solar energy, and bioenergy as prime sectors of opportunity, and redirected the MEGA subsidies towards these investments (McCabe, 2012). Furthermore, in 2008, the state developed and passed the nation's first battery tax credit legislation (McCabe, 2012). As a result, Michigan has since emerged as a notable player in the green energy sector, as revealed by the highest count of mega deal subsidies granted to projects of this nature (see Table 5). Out of the 36 megadeals that Michigan extended, an impressive eight were directed toward these green energy investments, amounting to a substantial total of \$1.1 billion in support.

#### *5.4 California's scheme to bolster the knowledge economy*

California has historically focused on market-shaping investment subsidies to guide business investment decisions. The establishment of the World Trade Commission in 1983 and an export financing program in 1985 exemplified this focus, aiming not only to reduce production factor costs but to shape the external demand for the state's goods and services (Eisinger, 1988, p. 295). Furthermore, during the 1980s, California amplified its funding for university research by more than one third in real terms following the relocation of the Microelectronics and Computer Technology Corporation—at the time the largest computer industry research consortia in the United States – to Austin, Texas in 1983 (Ibid, 233).

This strategy was solidified when California established an expansive R&D tax credit program in 1987. This is a market-shaping and horizontal subsidy program aiming to stimulate

**<Table 6 about here>**

R&D activity within the state without targeting specific corporations or products. Under this framework, any corporation that is engaged in research aiming to discover “information which is technological in nature” or information that holds the potential for “developing new or improved business components” through “a process of experimentation” is eligible to claim tax credits (legislation quoted in Summers and Chawla, 2013). A legislative report from 2003 reveals the intention of legislators to create a “public good” through these subsidies by reducing prices and increasing industrial productivity on average in the state through novel technologies and productivity-enhancing innovations (LAO, 2003). The program benefits a range of industries such as computer and electronics engineering, equipment manufacturing, semiconductors and other electronic components, pharmaceuticals, and medicine manufacturing, as well as software publishing industries (Summers and Chawla, 2013).

Since its establishment, California's R&D tax credit program has undergone significant expansion (Hall and Wosinska, 1999). Originally initiated at an 8% rate for qualified research within corporate facilities, the program’s incentives were augmented to 11% in 1996, further elevated to 12% in 1999, and ultimately reached 15% in 2000.<sup>v</sup> Additionally, the framework now allows companies to claim credits of up to 24% for research conducted at universities and scientific institutions (Hill, 2011). Consequently, the revenue forgone through R&D tax credits substantially surged, from an average annual amount of approximately \$350 million in the late 1990s, to \$1.2 billion in 2012, and to a remarkable \$2.47 billion in 2023. It’s important to note that while several other states have also implemented comparable R&D tax credit initiatives, California's program still stands out as one of the most rewarding for companies (see Wilson, 2009). Table 6 displays

the state's tax incentive spending during the 2012-2013 fiscal year. Notably, approximately 45.3% of this expenditure was allocated to the R&D tax credit program.

California's expensive R&D tax credit program is mainly financed through elevated state taxes, leading to complaints from businesses about its unfavorable investment climate. For example, Chief Executive Magazine's annual survey, which gauges CEOs' perceptions, ranked California as the least favorable state for conducting business for eight consecutive years between 2004-2012.<sup>vi</sup> Partly as a result of these business complaints, there have been some important changes in the composition of California's investment programs since 2010, reflecting a move towards a more market-conforming approach.

Firstly, the state inaugurated a new incentives program for film and teleproduction projects (includes gaming and television) in 2009. This program was a response to the establishment of attractive tax credit programs by other states, and the resulting job and investment losses in the film and television industry in California in the early 2000s (Thom, 2018). The unique nature of film and television production, often structured around individual projects, means that the industry can easily move production to states offering higher tax incentives, which gives rise to a beggar-thy-neighbor dynamic increasing the subsidies on this industry across states (Litvak and Litvak, 2006). Another important change has been the replacement of the long-lived EZ programs with the California Competes program in 2013. The California Competes program introduced a departure from the geographic targeting that characterized the EZ programs; any company with an interest in establishing, growing, or possibly remaining in California can seek these tax benefits. The annual credit allocated through the California Competes program was \$30 million in 2013-2014, \$150 million in 2014-2015, and reached \$200 million in 2017-2018 (Schulman, 2018).

Nevertheless, these new market-conforming programs have not significantly altered California's market-shaping approach to incentivizing business activity within the state. Firstly, spending on market-conforming programs has decreased in recent years (Kitson, 2020) and remains modest in size in comparison to similar programs in other states (Thom, 2018) and California's much larger R&D tax credit. For example, the spending for the California Competes program was only 10% of the spending for R&D credits in 2017-2018 fiscal year (Schulman, 2018). Secondly, the California Competes program deviates from the conventional beggar-thy-neighbor approach prevalent in other states' subsidies in several important ways (Freedman et al., 2023). Most programs incorporate explicit eligibility thresholds, limiting the discretionary powers of program officials in recipient selection, and imposing strict claw back provisions based on full-time employment, salary thresholds, and project investment commitments. If commitments are not met, the state can pause credit issuance and, eventually, cancel contracts and recapture credits. The state of California has demonstrated its commitment to enforcing these provisions in practice. For instance, a study revealed that by 2022, Californian authorities had reclaimed approximately \$248 million (31.35%) of the \$790 million credited to companies between 2014 and 2018 (Freedman et al., 2023). This emphasis on stringent oversight renders the program more conditional and less of a straightforward handout to businesses. It may also have contributed to the success of the program in generating new economic activity in disadvantaged parts of the state (Hyman et al., 2022).

## **6. Discussion and Conclusion**

Subnational investment subsidy schemes are among the most important fiscal policy tools available to state and subnational governments. All 50 states and thousands of municipalities have established them. Whether we examine the real estate industry or manufacturing sector or look to

policies focused on decarbonization or community revitalization, investment subsidies are woven into the fabric of how both business and public policy operates. Such programs are inherently political since they provide benefits to certain kinds of economic activities while denying them to other kinds. Such programs also come at great expense, costing taxpayers upwards of several hundred billion dollars per year.

Through a combination of qualitative and quantitative analyses of subsidy programs in key states, we have shown in this paper that subsidy programs can entail a wide variety of socio-economic logics that reflect different degrees of state steering and targetedness. South Dakota's rock bottom taxes and broad-based investment credits reflect a *laissez-faire* logic that induces investment by minimizing the state's role shaping markets and providing public goods while maximizing its role protecting private property rights and insulating business decisions from democratic accountability. This contrasts with Alabama's *beggar-thy-neighbor* industrial recruitment strategy where the state plays an active brokerage role aimed at inducing the relocation of established manufacturers from other jurisdictions without seeking to shape the development of the market or the direction of private investment. Michigan's efforts to redevelop its auto industry by encouraging new investment in batteries and helping transform its established players into leading electric car manufacturers is more indicative of the *developmentalist* logic long discussed in the industrial policy literature (Johnson, 1999). Finally, California's choice to forego large subsidy deals in favor of broad-based tax credits for research & development and exports is more indicative of a *Pigouvian* logic that addresses market failures while avoiding (in most cases) policies that steer economic development toward particular industries, firms, or technologies.

As a theory building article that is descriptive in orientation, we have mostly refrained from making causal claims. However, our hope is that this framework will be useful to scholars



interested in developing a more nuanced approach to the causes and consequences of different kinds of subsidy schemes. For economists, our framework can be used to identify a range of potential goals to evaluate. The current focus on economic growth or the number of jobs created might be appropriate in some cases, while measures of industrial transformation, infant industry development, research output, or decarbonisation might be more appropriate in others. For political scientists, our framework points to the need to develop a more variable understanding of the kinds of political coalitions that underpin subsidy programs. While beyond the scope of this paper, systematically identifying the distinct politics underpinning different subsidy schemes, and better understanding when and why different strategies predominate, would be a fruitful area for future research – and one we hope can be aided by the framework we develop in this paper.

More broadly, we hope our article helps move discourse beyond what is at times a simplistic normative critique of investment subsidies. Critics from both the left and the right have scrutinized subsidy programs, highlighting their deficiencies in achieving either economic growth and job generation or the social policy aspirations of fostering a more equitable and socially beneficial distribution of resources. They have also faced scrutiny for their potential to undermine democratic governance by encouraging electoral pandering, as well as fostering tendencies for business rent-seeking and capture. While we agree that many subsidy programs and deals do not always safeguard the economic or social welfare of everyday citizens, we believe a more appropriate approach would be to first evaluate each subsidy decision, program or policy based on the criteria established by its own explicit rationale and objectives. By adopting such a perspective, we can circumvent the pitfalls of an overly generalized critique and gain a more nuanced understanding of the multifaceted impacts and intentions of various subsidy initiatives. We can also more fully evaluate the political possibilities and limits of different strategies given a state's

existing factor endowments, organization of economic interests, and public preferences. This, in turn, can push debates about industrial policy beyond the question of *whether* the state should play a role in stimulating business investment and toward the more interesting problem of *how* this role should be organized, both in terms of the state's orientation toward the market and its focus on broad or targeted economic sectors and technologies.

## References

- Anderson, P., Bolema, T. and Rosaen, A. (2010) 'Effectiveness of Michigan's Key Business Tax Incentives', *East Lansing, MI: Anderson Economic Group*.
- Bartik, T. J. (1991) 'Who Benefits from State and Local Economic Development Policies?'
- Bartik, T. J. (1992) 'The Effects of State and Local Taxes on Economic Development: A Review of Recent Research', *Economic Development Quarterly*, **6**, 102–111.
- Bartik, T. J. (1993) 'Who Benefits from Local Job Growth: Migrants or the Original Residents?', *Regional studies*, **27**, 297–311.
- Bartik, T. J. (2017) 'A New Panel Database on Business Incentives for Economic Development Offered by State and Local Governments in the United States'.
- Bartik, T. J. (2019) 'Should Place-Based Jobs Policies Be Used to Help Distressed Communities?', *Available at SSRN 3430374*.
- Bartik, T. J. (2020) 'Using Place-Based Jobs Policies to Help Distressed Communities', *Journal of Economic Perspectives*, **34**, 99–127.
- Block, F. (2008) 'Swimming against the Current: The Rise of a Hidden Developmental State in the United States', *Politics & society*, **36**, 169–206.
- Bobonis, G. J. and Shatz, H. J. (2007) 'Agglomeration, Adjustment, and State Policies in the Location of Foreign Direct Investment in the United States', *The Review of Economics and Statistics*, **89**, 30–43.
- Brace, P. (1994) *State Government and Economic Performance*, JHU Press.
- Bulfone, F. (2020) 'New Forms of Industrial Policy in the Age of Regulation: A Comparison of Electricity and Telecommunications in Italy and Spain', *Governance*, **33**, 93–108.
- Bulfone, F. (2023) 'Industrial Policy and Comparative Political Economy: A Literature Review and Research Agenda', *Competition & Change*, **27**, 22–43.
- Bulfone, F., Ergen, T. and Kalaitzake, M. (2023) 'No Strings Attached: Corporate Welfare, State Intervention, and the Issue of Conditionality', *Competition & Change*, **27**, 253–276.
- Buss, T. F. (2001) 'The Effect of State Tax Incentives on Economic Growth and Firm Location Decisions: An Overview of the Literature', *Economic Development Quarterly*, **15**, 90–105.
- Cobb, J. C. (1993) *The Selling of the South: The Southern Crusade for Industrial Development 1936-1990*, University of Illinois Press.

- Dobbin, F. (2005) 'Comparative and Historical Approaches to Economic Sociology', *The handbook of economic sociology*, **2**, 26–48.
- Eisinger, P. K. (1988) *The Rise of the Entrepreneurial State: State and Local Economic Development Policy in the United States*, Univ of Wisconsin Press.
- Evans, P. B. (1995) *Embedded Autonomy: States and Industrial Transformation*, Princeton University Press.
- Freedman, M., Khanna, S. and Neumark, D. (2023) 'Combining Rules and Discretion in Economic Development Policy: Evidence on the Impacts of the California Competes Tax Credit', *Journal of Public Economics*, **217**, 104777.
- George, A. L. and Bennett, A. (2005) *Case Studies and Theory Development in the Social Sciences*, mit Press.
- Gerschenkron, A. (2015) 'Economic Backwardness in Historical Perspective (1962)', *Cambridge MA*.
- Goertz, Gary, and James Mahoney. 2013. *A Tale of Two Cultures: Qualitative and Quantitative Research in the Social Sciences*. Princeton University Press.
- Goss, E. P. and Phillips, J. M. (1994) 'State Employment Growth: The Impact of Taxes and Economic Development Agency Spending', *Growth and Change*, **25**, 287–300.
- Graham, O. L. (1992) *Losing Time: The Industrial Policy Debate*, Harvard University Press.
- Grant, D. S. and Hutchinson, R. (1996) 'Global Smokestack Chasing: A Comparison of the State-Level Determinants of Foreign and Domestic Manufacturing Investment', *Social Problems*, **43**, 21–38.
- Hacker, J. S. and Pierson, P. (2002) 'Business Power and Social Policy: Employers and the Formation of the American Welfare State', *Politics & Society*, **30**, 277–325.
- Hall, B. H. and Wosinska, M. (1999) 'The California R&D Tax Credit: Description, History, and Economic Analysis', *California Council on Science and Technology Series*.
- Hall, P. A. and Soskice, D. (2001) 'An Introduction to Varieties of Capitalism', *op. cit*, 21–27.
- Hicks, M. J. and LaFaive, M. (2011) 'The Influence of Targeted Economic Development Tax Incentives on County Economic Growth: Evidence from Michigan's MEGA Credits', *Economic Development Quarterly*, **25**, 193–205.
- Hill, J. (2011) *Bleeding Cash: Over a Decade, Ten Tax Breaks Cost California \$6.3 Billion More than Anticipated*, A report prepared for the California Senate Rules Committee, California Senate Office of Oversight and Outcomes.

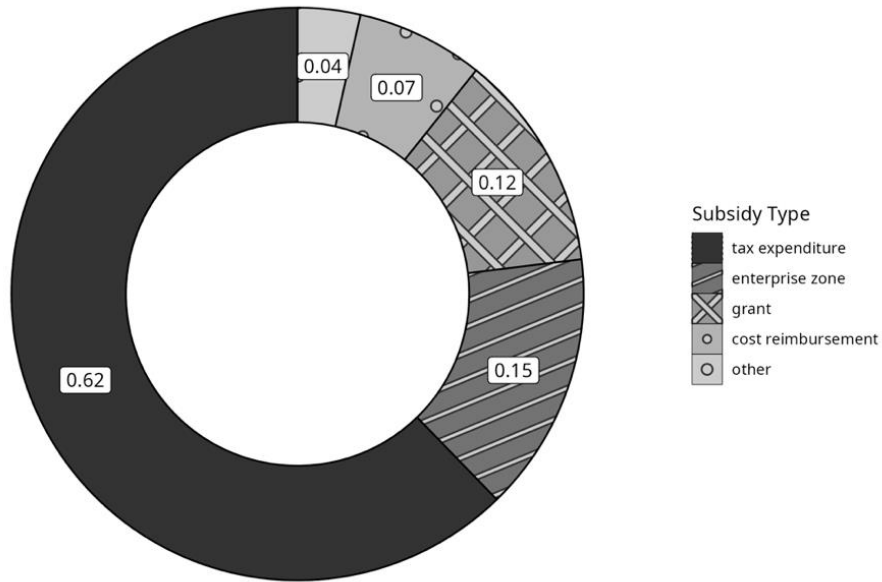
- Hyman, B. G., Freedman, M., Khanna, S. and Neumark, D. (2022) *Firm Responses to State Hiring Subsidies: Regression Discontinuity Evidence from a Tax Credit Formula*, National Bureau of Economic Research.
- Jansa, J. M. (2020) 'Chasing Disparity: Economic Development Incentives and Income Inequality in the US States', *State Politics & Policy Quarterly*, **20**, 462–488.
- Jansa, J. M. and Gray, V. (2017) 'Captured Development: Industry Influence and State Economic Development Subsidies in the Great Recession Era', *Economic Development Quarterly*, **31**, 50–64.
- Jenkins, J. C., Leicht, K. T. and Wendt, H. (2006) 'Class Forces, Political Institutions, and State Intervention: Subnational Economic Development Policy in the United States, 1971–1990', *American Journal of Sociology*, **111**, 1122–1180.
- Jensen, N. M. and Malesky, E. J. (2018) *Incentives to Pander: How Politicians Use Corporate Welfare for Political Gain*, Cambridge University Press.
- Jensen, N. M., Malesky, E. J. and Walsh, M. (2015) 'Competing for Global Capital or Local Voters? The Politics of Business Location Incentives', *Public Choice*, **164**, 331–356.
- John, R. R. (1997) 'Governmental Institutions as Agents of Change: Rethinking American Political Development in the Early Republic, 1787–1835', *Studies in American Political Development*, **11**, 347–380.
- Johnson, C. (1999) 'The Developmental State: Odyssey of a Concept', *The developmental state*, **12**, 32–60.
- Juhász, R., Lane, N. J. and Rodrik, D. (2023) *The New Economics of Industrial Policy*, National Bureau of Economic Research.
- Kattel, R. and Mazzucato, M. (2018) 'Mission-Oriented Innovation Policy and Dynamic Capabilities in the Public Sector', *Industrial and corporate change*, 787–801.
- Kitson, K. (2020) *Tax Breaks: California's \$60 Billion Loss*, California Budget & Policy Center.
- LaFaive, M. D., Hicks, D. M. J. and Devaraj, S. (2020) 'Economic Development? State Handouts and Jobs', *Mackinac Center*, accessed at <https://www.mackinac.org/S2020-05> on August 28, 2023.
- LAO (2003) *An Overview of California's Research and Development Tax Credit*, Legislative Analyst's Office.
- LeRoy, G. (2005) *The Great American Jobs Scam: Corporate Tax Dodging and the Myth of Job Creation*, Berrett-Koehler Publishers.
- Lindberg, L. N. and Campbell, J. L. (1991) 'The State and the Organization of Economic Activity', *Governance of the American economy*, 356–395.

- Litvak, I. A. and Litvak, M. (2006) 'Hollywood Movie Production Industry: Floating Factories'. In *Academy of International Business (AIB), Southeast Annual Conference, USA*, pp. 280–292.
- Logan, J. R. and Molotch, H. (2007) *Urban Fortunes: The Political Economy of Place, with a New Preface*, Univ of California Press.
- Loveridge, S. and Nizalov, D. (2007) 'Increasing the Equity and Efficiency of Tax Abatement Programs', *Journal of Regional Analysis and Policy*, **37**, 30–34.
- Mahtesian, C. (1994) 'Romancing the Smokestack', *Governing*, **8**, 36–40.
- Markusen, A. R. and Nesse, K. (2007) 'Institutional and Political Determinants of Incentive Competition'.
- Mazzucato, M. (2013) 'The Entrepreneurial State: Debunking Public Vs', *Private sector myths*, **1**.
- McCabe, A. (2012) *Michigan Clean Energy and Economic Development Policies - Georgetown Climate Center*.
- McNamara, K. R. (2023) 'Transforming Europe? The EU's Industrial Policy and Geopolitical Turn', *Journal of European Public Policy*, 1–26.
- Michigan Strategic Fund (2010) *Performance Audit of the 21st Century Jobs Trust Fund Programs*.
- Mohr, J. (2018) 'Globalization and the Auto Industry in the US South'.
- Polanyi, K. (1957) *The Great Transformation: (The Political and Economic Origin of Our Time)*, Beacon Press.
- Reese, L. A. (2014) 'If All You Have Is a Hammer: Finding Economic Development Policies That Matter', *The American Review of Public Administration*, **44**, 627–655.
- Rickard, S. (2018) *Spending to Win: Political Institutions, Economic Geography, and Government Subsidies*, Cambridge University Press.
- Rodrik, Dani. 2004. *Getting Institutions Right*, Harvard University. Mass. Mimeo.
- Sands, G. and Reese, L. A. (2009) 'Michigan's Industrial Tax Abatements: Pyrrhic Victories', *Sustaining Michigan*, 45–62.
- Schulman, C. K. (2018) 'Future-Proofing the Video Game Industry in California'.
- Slattery, C. (2022) 'The Political Economy of Subsidy Giving', *Available at SSRN 4185083*.
- Slattery, C. and Zidar, O. (2020) 'Evaluating State and Local Business Incentives', *Journal of Economic Perspectives*, **34**, 90–118.

- Sobel, R. S., Wagner, G. A. and Calcagno, P. T. (2022) 'The Political Economy of State Economic Development Incentives: A Case of Rent Extraction', *Economics & Politics*.
- Stinchcombe, Arthur L. 1987. *Constructing Social Theories*. University of Chicago Press.
- Stokan, E. (2013) 'Testing Rubin's Model 25 Years Later: A Multilevel Approach to Local Economic Development Incentive Adoption', *Economic Development Quarterly*, **27**, 301–315.
- Summers, A. B. and Chawla, A. (2013) *Tax Credits in California: Economic Growth Engine or Wasteful Corporate Welfare?*, Reason Foundation.
- Taylor, M. (1993) 'Proposal to Prohibit Industrial Relocation Subsidies', *Tex. L. Rev.*, **72**, 669.
- TEconomy (2016) *Michigan 21st Century Jobs Trust Fund—Entrepreneurship and Innovation Programs Impact and Effectiveness Study*.
- Teubner, G. (2001) 'Legal Irritants: How Unifying Law Ends up in New Divergences', *Varieties of capitalism*, 417–42.
- Thatcher, M. (2014) 'From Old to New Industrial Policy via Economic Regulation', *Rivista della regolazione dei mercati*, **2**, 6–22.
- Thelen, K. (2014) *Varieties of Liberalization and the New Politics of Social Solidarity*, Cambridge university press.
- Thom, M. (2018) 'Time to Yell "Cut?" An Evaluation of the California Film and Production Tax Credit for the Motion Picture Industry', *California Journal of Politics and Policy*, **10**.
- Thomas, K. (2010) *Investment Incentives and the Global Competition for Capital*, Springer.
- Thomas, K. (2012) 'EU Control of State Aid to Mobile Investment in Comparative Perspective', *Journal of European Integration*, **34**, 567–584.
- Viventi, J. R. (2001) 'Interlocal Agreements and Economic Development in Michigan', *Wayne L. Rev.*, **47**, 307.
- Walton, J. (1992) 'Making the Theoretical Case. What Is a Case?: Exploring the Foundation of Social Inquiry. C. Ragin and HS Becker'.
- Wang, J., Ellis, S. E. and Rogers, C. L. (2018) 'Income Inequality and Economic Development Incentives in US States: Robin Hood in Reverse?', *Review of Regional Studies*, **48**, 93–117.
- Warwick, K. (2013) 'Beyond Industrial Policy: Emerging Issues and New Trends'.
- Wilson, D. J. (2009) 'Beggar Thy Neighbor? The in-State, out-of-State, and Aggregate Effects of R&D Tax Credits', *The Review of Economics and Statistics*, **91**, 431–436.

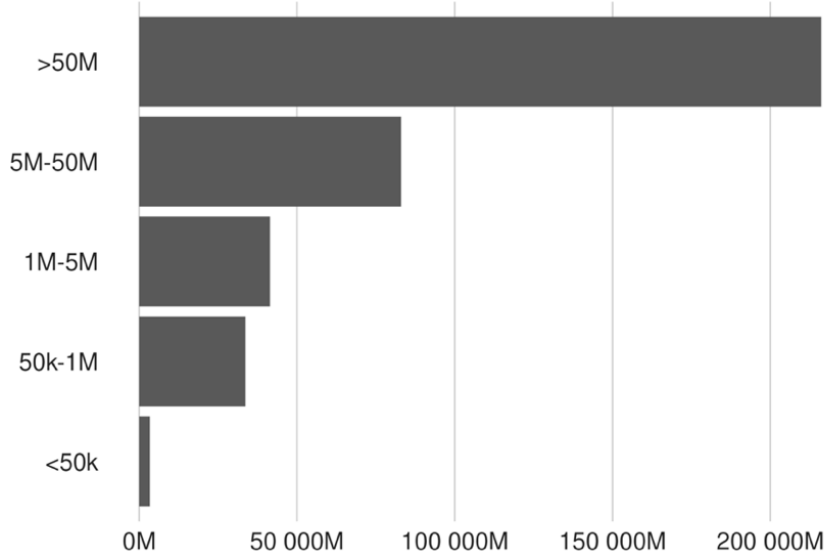
**Figures and Tables**

*Figure 1: State-level subsidy spending by instrument, states & localities, 2022 dollars*



*Source: Authors' calculations using Good Jobs First Subsidy tracker.*

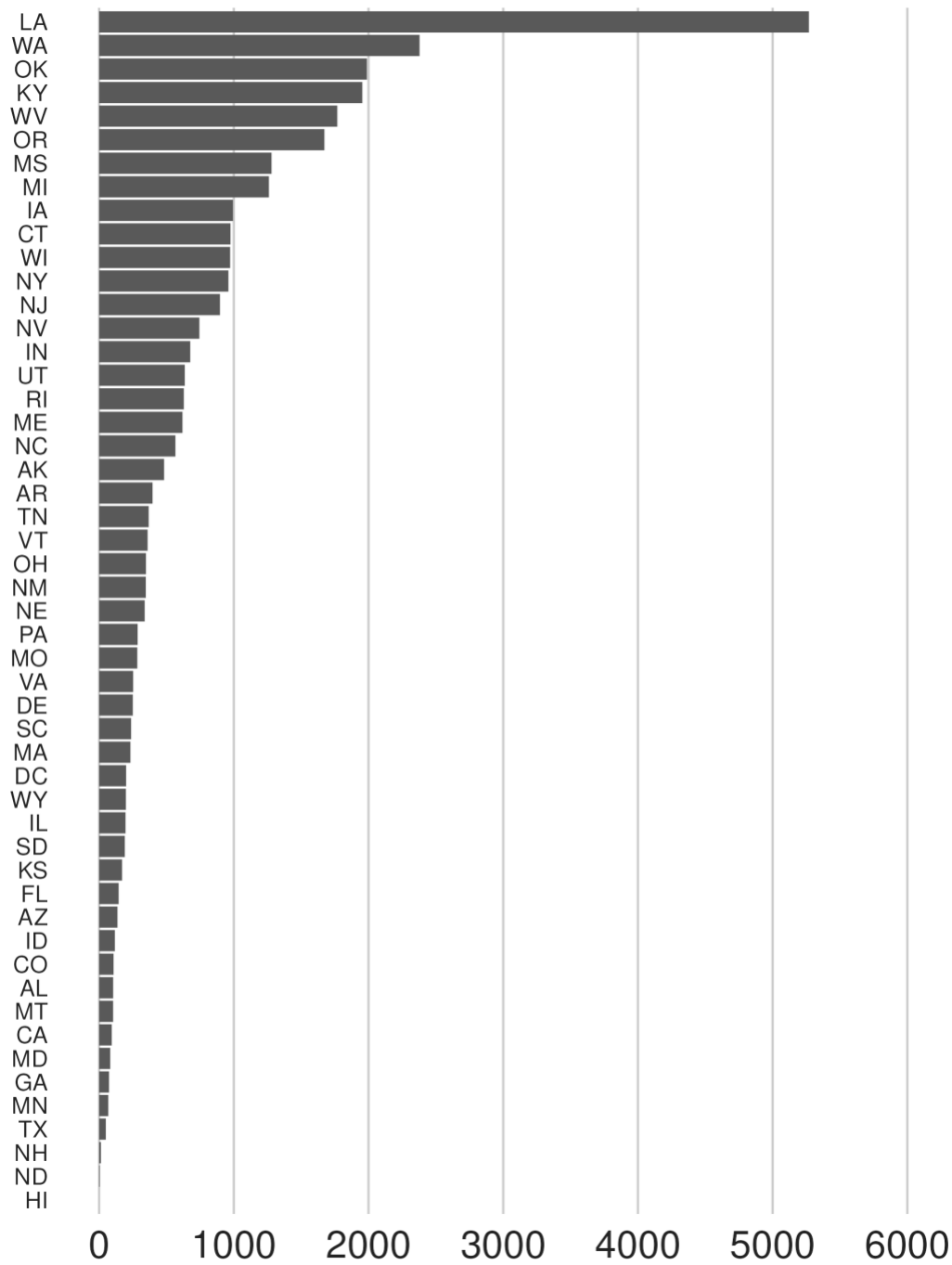
*Figure 2: Total subsidy spending by subsidy size (states and localities), 2022 dollars*



*Source: Authors' calculations using Good Jobs First Subsidy tracker.*

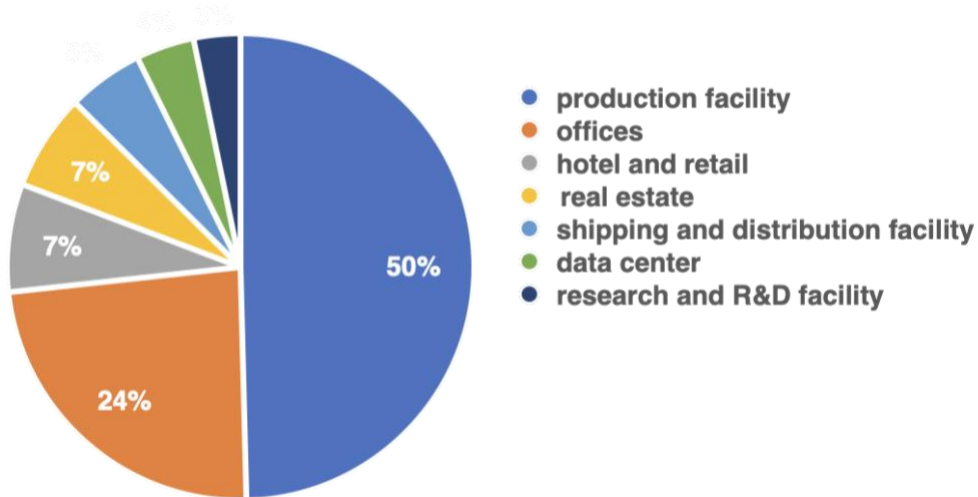


Figure 3: Subsidy intensity by state (average subsidy spending per million dollars of state GDP)



Source: Authors' calculations using Good Jobs First Subsidy tracker.

Figure 4: Subsidy intensity by state (average subsidy spending per million dollars of state GDP)



Source: Authors’ calculations using Good Jobs First Subsidy tracker.

Table 1: Types of locational investment subsidy schemes

Subsidy market orientation	Subsidy focus (Targetedness)	
	Horizontal targets	Vertical targets
<b>Market-conforming</b>	<p><i>Laissez-faire subsidies (tax competition)</i></p> <ul style="list-style-type: none"> <li>• Instruments: Low corporate taxes/ broad-based investment rebates.</li> <li>• Examples: Wyoming and South Dakota’s zero corporate tax rates.</li> </ul>	<p><i>Beggar-thy-neighbor subsidies (corporate welfare)</i></p> <ul style="list-style-type: none"> <li>• Instruments: Business relocation and retainment deals.</li> <li>• Examples: Amazon HQ2 competition. Alabama’s recruitment of foreign auto &amp; aerospace manufacturers</li> </ul>
<b>Market-shaping</b>	<p><i>Pigouvian subsidies (public goods)</i></p> <ul style="list-style-type: none"> <li>• Instruments: targeted tax credits or loans for technology development</li> <li>• Examples: California’s R&amp;D tax credit program; brownfield tax credits</li> </ul>	<p><i>Developmental subsidies (entrepreneurial state)</i></p> <ul style="list-style-type: none"> <li>• Instruments: State venture capital funds and mega deals transforming incumbent firms.</li> <li>• Examples: Michigan’s car battery subsidies; select green energy transition subsidies</li> </ul>

Table 2: Corporate subsidy expenditures in South Dakota, 2000-2022

Program name	Number of subsidies	Average subsidy	Total subsidy value	Market orientation	Focus
Reinvestment Payment Program	79	\$1,675,926	\$132,398,154	conforming	horizontal
South Dakota Jobs Program	36	\$49,834	\$1,794,024	conforming	horizontal
Revolving Economic Development and Initiative (REDI)	164	unspecified	Revolving fund; unspecified	conforming	horizontal
South Dakota Works	53	unspecified	Revolving fund; unspecified	conforming	horizontal
Dakota Seeds	754	\$4,825	\$3,638,050	shaping	horizontal
Workforce Development Program	98	\$86,198	\$8,447,404	shaping	horizontal

Source: Good Jobs First.

Table 3: Investment subsidy spending in Alabama, 1993-2022

Company name (parent) or Program name	Total subsidy value	Market orientation	Focus
Arcelor Mittal	\$1,073M	Conforming	Vertical
Daimler	\$457M	Conforming	Vertical
Bayer	\$426M	Conforming	Vertical
Honda	\$247M	Conforming	Vertical
Hyundai Motor	\$234M	Conforming	Vertical
Golden Dragon Precise Copper Tube	\$202M	Conforming	Vertical
Airbus	\$159M	Conforming	Vertical
Boeing	\$150M	Conforming	Vertical
Trico Steel (Nucor)	\$85M	Conforming	Vertical
Google (Alphabet)	\$81M	Conforming	Vertical
Polaris	\$80M	Conforming	Vertical
Remington (Ceberus Capital Management)	\$69M	Conforming	Vertical
Amazon	\$55M	Conforming	Vertical
Hudson Alpha Institute of Technology	\$50M	Shaping	Vertical
Alabama Industrial Development Training	\$26M	Conforming	Horizontal
Industrial Development Grant	\$8M	Conforming	Horizontal

Source: Good Jobs First.

Table 4: Nominal tax expenditures for select Michigan tax incentive programs in FY 2008

Tax incentive programs	Type of program	Nominal tax expenditure (Budget FY 2008)
Industrial Facilities Tax (IFT) abatement program (PA 198)	Market conforming, horizontal	\$310,000,000
MEGA programs (PA 24)	Market conforming, vertical	\$140,704,000
Renaissance Zones (PA 376)	Market conforming, horizontal	\$142,380,000

Source: Anderson et. al. 2010

Table 5: Michigan Mega Deals financing battery and green energy projects

Year	Subsidy recipient company	Program	Subsidy amount
2008	United Solar Ovonic	Renaissance Zone	\$96,900,000
2009	Dow Kokam	State battery tax credits + Renaissance zone	\$194,300,000
2009	General Motors	State battery tax credits	\$166,800,000
2009	Johnson Controls-Saft Advanced Power Solutions	State battery tax credits	\$168,500,000
2009	LG Chem-Compact Power	State battery tax credits	\$198,000,000
2009	A123 Systems	State battery tax credits	\$152,300,000
2010	Dow Chemical	Center of Energy Excellence Program grant	\$129,300,000
2010	Fortu PowerCell, Inc.	State battery tax credits	\$112,600,000
	TOTAL		\$1,190,800,000

Source: Good Jobs First

Table 6: Tax credit programs in California, 2012-2013

Tax credit programs (FY 2012-13)	Sums (in millions)	Percent of spending	Orientation towards markets	Focus
Research & Development Credit	\$1,200	45.30	shaping	horizontal
Enterprise Zones and Similar locational programs	\$600	22.65	conforming	horizontal
Special programs for computer programming	\$288	10.87	shaping	vertical
Fuel subsidies for transportation companies	\$140	5.29	conforming	vertical
Special programs for farming	\$137	5.17	conforming	vertical
Special programs for films	\$124	4.68	conforming	vertical
Corporate tax credit for low-income housing projects	\$65	2.45	shaping	vertical
Hiring corporate tax credits	\$55	2.08	shaping	horizontal
Mining subsidies	\$27	1.02	conforming	vertical
Alternative energy tax credits	\$13	0.49	shaping	vertical
TOTAL	\$2,649	100.00		

Source: Summers & Chawla 2013

---

<sup>i</sup> See generally “The great American tax haven: why the super-rich love South Dakota,” *The Guardian*, Nov. 14, 2019. Available at < <https://www.theguardian.com/world/2019/nov/14/the-great-american-tax-haven-why-the-super-rich-love-south-dakota-trust-laws>>. Last accessed Aug. 24, 2023.

<sup>ii</sup> See “Pandora papers reveal South Dakota’s role as \$367bn tax haven,” *The Guardian* Oct. 4, 2021. Available at <https://www.theguardian.com/news/2021/oct/04/pandora-papers-reveal-south-dakotas-role-as-367bn-tax-haven>.

<sup>iii</sup> See “Business Incentives and Economic Development Expenditures: An Overview of South Dakota’s Program Investments and Outcomes,” Center for Regional Economic Competitiveness, September 2015. Accessible at [https://www.stateincentives.org/media/2015/outcomes/South\\_Dakota\\_State\\_Specific\\_Report\\_-\\_September\\_2015.pdf](https://www.stateincentives.org/media/2015/outcomes/South_Dakota_State_Specific_Report_-_September_2015.pdf).

<sup>iv</sup> For instance, SIDA officials did not require Mercedes to commit to hiring a diverse group of workers, as requested by some African-American state legislators. Alabama governors have also consistently opposed unionization efforts at plants receiving subsidies.

<sup>v</sup> See “An Overview of California’s Research and Development Tax Credit,” Legislative Analyst’s Office. Accessible at [https://lao.ca.gov/2003/randd\\_credit/113003\\_research\\_development.html](https://lao.ca.gov/2003/randd_credit/113003_research_development.html) (accessed in August, 2023).

<sup>vi</sup> J.P. Donlon, “Another Triumph for Texas,” ChiefExecutive.net, May 2, 2012, <http://chiefexecutive.net/best-worst-states-for-business-2012> (accessed on October 23, 2023).