THE MISSING LABOR INFRASTRUCTURE OF EFFECTIVE INDUSTRIAL POLICY

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The second Trump administration has begun a concerted effort to reorganize the labor force of the entire United States. As federal workers are fired and higher education workers face funding cuts, the government is leaning into the bipartisan trend of using tariffs and subsidies to create jobs in sectors that serve a public purpose. Called "industrial policy," the intervention of the federal government in private markets has spiked in popularity over the past decade. Bucking a longstanding tradition of laissez-faire capitalism and free trade, the executive and Congress have shown a willingness to put a visible hand on the market by subsidizing some sectors and taxing others. These interventions can easily backfire, as economists have warned, due to mistakes in the selection of subsidized sectors, high costs from tariffs, and ultimately slowed growth. Less discussed is the key role played by workers, whose unwillingness or inability to mobilize as directed by industrial policy could have dire consequences.

This Essay describes the barriers that may prevent American workers from participating in modern industrial policy, thereby undermining the success of the economy as a whole. The United States is already facing a labor shortage and employment rates are high, meaning there is little excess capacity for workers to move into domestic manufacturing or other jobs subsidized by industrial policy. Markets for services and goods that support workers, such as healthcare, housing, and childcare, have major gaps that further decrease labor supply. Instead of filling these gaps, however, industrial policy has chosen to target more esoteric markets. Workers then choose not to participate in the labor force, making it even more difficult to achieve the aims of industrial policy.

To support this thesis, we introduce novel empirical analysis on a key example of labor infrastructure—childcare. We build the most comprehensive existing dataset of childcare facilities in California and use it to document that more than sixty-five percent of children live in cities with no childcare, labeled "deserts," or in cities with an inadequate supply of childcare. Labor supply is lower in deserts and underserved cities, even when controlling for other city characteristics, suggesting that there may be scope for interventions to increase childcare availability and increase labor supply.

The Essay then lays out a policy agenda that would give industrial policy a better chance for success. The first sectors to target should be domestic industries that support labor productivity. These policies are the least likely to have unintended negative consequences and will enable the success of other reforms. Then, industrial policy can target missing labor markets already prioritized by the Biden and Trump administrations—manufacturing, construction, and new technologies. By prioritizing workers over

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artificial intelligence and other forms of non-human capital, industrial policy is more likely to create long-term value for the American economy.

INTRODUCTION

Industrial policy, the practice of federal government intervention into private markets to achieve public goals, has exploded in popularity over the past eight years.[1] Despite a historical preference for free market capitalism

[1] For general background on the history of industrial policy and its interactions with political realities and various areas of law, see, for example, Amy Kapczynski & Joel Michaels, *Administering a Democratic Industrial Policy*, 18 HARV. L. & POL'Y REV. 279 (2024) (describing the rise of industrial policy and the challenges it faces in remaining democratically accountable while being implemented outside traditional notice-and-comment rulemaking); Lenore Palladino, *The Need for Corporate Guardrails in U.S. Industrial Policy*, 47 SEATTLE U. L. REV. 581 (2024) (analyzing the interaction between industrial policy and corporate law, with a focus on sharing the benefits of public subsidies across stakeholders); Daniel A. Farber, *Turning Point: Green Industrial Policy and the Future of U.S. Climate Action*, 11 TEX. A&M L. REV. 303 (2024) (demonstrating the positive downstream effects of the Inflation Reduction Act, an industrial policy, on the environment and the role industrial policy plays in combatting climate change); Joseph E. Stiglitz, *Western Industrial Policy and International Law*, PROJECT SYNDICATE (May 31, 2023), https://www.project-syndicate.org/commentary/us-europe-industrial-policies-international-law-level-playing-field-by-joseph-e-stiglitz-2023-05 [https://perma.cc/QZR2-GH6L] (characterizing industrial policy as a potential precursor to increased international cooperation); Réka Juhász & Nathan Lane, *The Political Economy of Industrial Policy*, 38 J. ECON. PERSPS. 27 (2024) (summarizing the economic literature on industrial policy, with a focus on international empirical and theoretical analysis). For information on the rise of industrial policy in the last eight years, see, for example, Réka Juhász, Nathan Lane & Dani Rodrik, *The New Economics of Industrial Policy*, 16 ANN. REV. ECON. 213, 216 (2024) (defining industrial policy as "those government policies that

in the United States, recent federal government actions have enacted a combination of tariffs and sector-specific subsidies that promise to radically reshape the American economy.[2] Proponents of industrial policy argue that limiting free trade and intervening in private industry will promote competitiveness on the worldwide stage, increase supply chain resilience, and create jobs.[3] Both the Trump and Biden administrations have expanded the use of industrial policy, announcing new tariffs regularly and budgeting money to give to corporations that focus on industries blessed by Congress.[4]

The long-term success of these policies, however, depends heavily on the specifics of which sectors are targeted and which policy levers are pulled. Many economists oppose broad-based tariffs and argue that industrial policy requires uninformed government officials to "pick winners" by making

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explicitly target the transformation of the structure of economic activity in pursuit of some public goal" and identifying an increase in industrial policy interventions beginning in 2018); Chad P. Bown, *Modern Industrial Policy and the WTO* 2 (Peterson Inst. for Int'l Econ., Working Paper No. 23-15, 2024), https://www.piie.com/sites/default/files/2023-12/wp23-15.pdf [https://perma.cc/7KYV-ZY9U] (identifying industrial policy as an economic strategy that has recently enjoyed increased popularity with major high-income industrial economies); WILLIAM B. BONVILLIAN, INFO. TECH. & INNOVATION FOUND., EMERGING INDUSTRIAL POLICY APPROACHES IN THE UNITED STATES 10 (2021), https://itif.org/publications/2021/10/04/emerging-industrial-policy-approaches-united-states [https://perma.cc/M357-ZHY8] (describing a surge in the popularity and use of industrial policy following the COVID-19 pandemic in 2020); *cf.* Jean Tirole, *Competition and Industrial Policy in the 21st Century*, 3 OXFORD OPEN ECON. i983, i983 (2024) (situating industrial policy among the key policy levers gaining popularity in the 21st century).

[2] *See, e.g.*, Josh Bivens, *The Industrial Policy Revolution Has Begun, but Another Is Still Needed*, ECON. POL'Y INST. 5–7 (May 18, 2023), https://www.epi.org/publication/industrial-policy [https://perma.cc/T58X-G62F] (describing how industrial policy has benefits for accomplishing some policy goals but also comes with limitations); Willy C. Shih, *The New Era of Industrial Policy Is Here*, 101 HARV. BUS. REV. 66, 69, 71 (2023) (categorizing different forms of industrial policy and contrasting the American experience with that of other countries); Anshu Siripurapu & Noah Berman, *Is Industrial Policy Making a Comeback?*, COUNCIL ON FOREIGN RELS. (Sept. 18, 2023, 9:45 AM), https://www.cfr.org/backgrounder/industrial-policy-making-comeback [https://perma.cc/R8N7-UZ23] (summarizing the American history of resistance to industrial policy, along with new forces pushing industrial policy towards increased popularity); WORLD ECON. F., INDUSTRIAL POLICY AND INTERNATIONAL COMPETITION: TRADE AND INVESTMENT PERSPECTIVES (2022), https://www3.weforum.org/docs/WEF_Industrial_Policy_and_International_Competition_2022.pdf [https://perma.cc/Z66R-CCXD] (discussing the negative trade implications of industrial policy and providing ways forward to implement international cooperation).

[3] *See, e.g.*, Juhász, Lane & Rodrik, *supra* note 1, at 214–17 (describing the benefits and economic rationales for the use of industrial policy).

[4] Neil Irwin, *How Trump Might Rewire Bidenomics*, AXIOS (Jan. 4, 2025), https://www.axios.com/2025/01/03/trump-biden-economics-ev [https://perma.cc/6BX6-7ABG]; *Fact Sheet: President Donald J. Trump Declares National Emergency to Increase Our Competitive Edge, Protect Our Sovereignty, and Strengthen Our National and Economic Security*, WHITE HOUSE (Apr. 2, 2025), https://www.whitehouse.gov/fact-sheets/2025/04/fact-sheet-president-donald-j-trump-declares-national-emergency-to-increase-our-competitive-edge-protect-our-sovereignty-and-strengthen-our-national-and-economic-security [https://perma.cc/Z4U4-TSJP] (announcing a "10% tariff on all countries" and an "individualized reciprocal higher tariff on the countries with which the United States has the largest trade deficits").

arbitrary judgments about which sectors should be subsidized.[5] If these policies are unsuccessful, the public may waste many billions of dollars on subsidies and tariffs.[6] Moreover, inefficiencies created by subsidizing the wrong sectors and limiting trade could slow growth or create shortages in essential goods.[7] To make industrial policy work, inputs to production, including capital and labor, must be reallocated to new sectors.

Major roadblocks limit workers' ability to quickly change sectors, even if they are offered retraining or other forms of assistance.[8] The United States

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5 *See, e.g.*, Tristan Reed, *Export-Led Industrial Policy for Developing Countries: Is There a Way to Pick Winners?*, 38 J. ECON. PERSPS. 3, 5 (2024) (noting that, at a minimum, a government can "reduce its chances of picking losers"); David L. Johnson, Mark Muro, Mayu Takeuchi & Robert Maxim, *Sustaining America's New Industrial Policy*, BROOKINGS INST. (Dec. 12, 2024), https://www.brookings.edu/articles/sustaining-americas-new-industrial-policy-pathways-to-extend-place-based-economic-development [https://perma.cc/6BGX-FFH7] (showing examples of sectoral investments determined to be of significant importance); Peter Dizikes, *Miracle, or Marginal Gain?*, MIT NEWS (Dec. 18, 2024), https://news.mit.edu/2024/miracle-or-marginal-gain-industry-policy-1218 [https://perma.cc/BQ35-RYZQ] (discussing the complexities of selecting sectors and seeing continued growth); Shih, *supra* note 2, at 69 (finding that "[a] more controversial, and increasingly common, type of [industrial policy] intervention focuses on helping specific industries or sectors").

6 The costs associated with even successful industrial policy have been estimated in the tens of billions of dollars. SCOTT LINCICOME & HUAN ZHU, CATO INST., QUESTIONING INDUSTRIAL POLICY: WHY GOVERNMENT MANUFACTURING PLANS ARE INEFFECTIVE AND UNNECESSARY 19 (2021), https://www.cato.org/sites/cato.org/files/2021-09/white-paper-questioning-industrial-policy-updated.pdf [https://perma.cc/5XY9-RZ5G] ("[T]he 2009 government bailouts of General Motors and Chrysler, which were deemed industrial policy successes by the Obama administration . . . cost taxpayers about $10 billion . . . . [The] true, interest-adjusted cost to taxpayers . . . was 40 percent higher ($14 billion)."). *See also, e.g.*, Anna Ilyina, Ceyla Pazarbasioglu & Michele Ruta, *Industrial Policy Is Back but the Bar to Get It Right Is High*, IMF BLOG (Apr. 12, 2024), https://www.imf.org/en/Blogs/Articles/2024/04/12/industrial-policy-is-back-but-the-bar-to-get-it-right-is-high [https://perma.cc/Y3G6-TW9V] (noting that industrial policy can lead to the misallocation of government resources); Rabah Arezki & Jean-Pierre Landau, *Picking Winners Is Difficult and Costly*, INT'L MONETARY FUND: FIN. & DEV. MAG. (Sept. 2024), https://www.imf.org/en/Publications/fandd/issues/2024/09/picking-winners-is-difficult-and-costly-Arezki-Landau [https://perma.cc/9YTW-EHUQ] (finding that "one major risk of the revival of industrial policy is the wasting of resources").

7 *See, e.g.*, Arezki & Landau, *supra* note 6 ("Combined with high levels of public debt, the higher real [interest] rate [resulting from industrial policy] will impose strong financial constraints on advanced economies."); Douglas Irwin, *The Return of Industrial Policy*, INT'L MONETARY FUND: FIN. & DEV. MAG. 13 (June 2023), https://www.imf.org/en/Publications/fandd/issues/2023/06/the-return-of-industrial-policy-douglas-irwin [https://perma.cc/QM5C-8Z3B] ("In Western Europe, growth was related to the shifting of resources out of agriculture and into industry and services. Trade policies designed to protect agriculture from low prices likely slowed this transition in countries such as Germany."); Yan Guo, Xinning Yu, Caifeng Zhou & Gaoyan Lyu, *Government Subsidies for Preventing Supply Disruption When the Supplier Has an Outside Option Under Competition*, 147 TRANSP. RSCH. PART E, no. 102218, 2021, at 2 (finding supplier side subsidies can lead to supply disruptions or shortages in the local market when a more profitable external market exists).

8 *E.g.*, DANI RODRIK, HAMILTON PROJECT, AN INDUSTRIAL POLICY FOR GOOD JOBS 6 (2022), https://www.brookings.edu/wp-content/uploads/2022/09/20220928_THP_Proposal_Rodrik_GoodJobs.pdf

is experiencing significant labor shortages, due to the combined effects of aging, low birth rates, and low labor force participation.[9] The economy is already at full employment, suggesting little additional capacity for workers to scale up domestic manufacturing or rapidly expand clean energy businesses.[10] Imposing tariffs or providing subsidies without workers available will just increase costs.[11]

In this Essay, we argue that industrial policy must begin by supporting workers.[12] We suggest that deprioritizing workers has the potential to undermine industrial policy writ large and the economy as a whole.[13] The policy priority should be subsidizing sectors that help workers to participate in the labor force and be productive, such as healthcare, housing, and childcare, which we label "labor infrastructure."[14] Filling gaps in these

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[https://perma.cc/P4QR-W5ZV] (explaining that while it is assumed that industrial policy will result in improved labor market outcomes, those outcomes are not assured unless policymakers explicitly consider good job creation in their design); *id.* at 6 (describing "coordination failures" that make private investment into industry less likely).

9 *See, e.g.*, Roy Maurer, *US Labor Shortage Looms: Who Will Do the Work?*, SHRM (2025), https://www.shrm.org/topics-tools/news/hr-quarterly/us-labor-shortage-looms-who-will-do-work [https://perma.cc/KV3B-GNKK]; Michael Horrigan, Misty Heggeness, Kate Bahn & Michael R. Strain, *Is There a Labor Shortage?*, 57 BUS. ECON. 6 (2022) (discussing trends impacting lower labor force participation); Laurel Kalser, *'Largest Labor Shortage the Country Has Ever Seen' Looms, Report Warns*, HR DIVE (Sept. 19, 2024), https://www.hrdive.com/news/impending-labor-shortage/727399 [https://perma.cc/YQ8Q-6A22] ("There will be several major roadblocks on the path to developing a future-ready workforce: a 'Silver Tsunami' of Baby Boomers retiring; falling childbirth rates; younger generations desiring office-based jobs requiring a college degree; and a shrinking number of working age adults participating in the labor force . . . ."); Stephanie Ferguson Melhorn, *Understanding America's Labor Shortage*, U.S. CHAMBER OF COM. (Apr. 18, 2025), https://www.uschamber.com/workforce/understanding-americas-labor-shortage [https://perma.cc/48VE-6AM7] (listing early retirements and an aging workforce as one factor contributing to the labor shortage).

10 *See infra* notes 122–25 and accompanying text.

11 *See* Mary Amiti, Stephen J. Redding & David E. Weinstein, *The Impact of the 2018 Tariffs on Prices and Welfare*, 33 J. ECON. PERSPS. 187, 197 (2019) (finding the Trump administration's 2018 tariffs "have been almost entirely passed through into domestic prices"); *Subsidies Are the Problem, Not the Solution, for Innovation in Energy: Hearing on "Department of Energy Oversight: Office of Energy Efficiency and Renewable Energy" Before the H. Comm. on Sci., Space, & Tech., Subcomm. on Energy*, 114th Cong. 3 (2015) (statement of Veronique de Rugy, Senior Research Fellow, Mercatus Center at George Mason University), https://www.mercatus.org/research/federal-testimonies/subsidies-are-problem-not-solution-innovation-energy [https://perma.cc/KJ4G-C6QQ] ("When the government starts choosing industries and technologies to subsidize, it often makes bad decisions at taxpayer expense, because policymakers possess no special knowledge that allows them to allocate capital more efficiently than markets.").

12 *See infra* Part I.

13 *See infra* Part III; *see also* RODRIK, *supra* note 8, at 6 (explaining that industrial policy must explicitly account for the creation of good jobs).

14 *See, e.g.*, *Factsheet: What Does the Research Say About Care Infrastructure?*, WASH. CTR. FOR EQUITABLE GROWTH (Apr. 15, 2021), https://equitablegrowth.org/factsheet-what-does-the-research-say-about-care-infrastructure [https://perma.cc/XEV5-RSD7] (describing the key role played by care industries, including childcare, in enabling the success of workers); Joe Waters,

markets will create jobs for healthcare workers, construction workers, and teachers, while also increasing the productive capacity of the entire labor force.[15] This approach would require a radical shift in priorities and motivations. Currently, creating jobs is just one of several goals of industrial policy.[16] Moreover, industrial policy has consistently overlooked domestic services and goods that primarily benefit workers.[17]

To support our argument, we provide novel empirical evidence in this Essay on the importance of childcare in increasing worker productivity.[18] We build a new dataset of childcare facilities in California, including both large daycare centers and small and large family daycares. Based on each facility's capacity compared to Census estimates of the number of children in each city,[19] we show that more than sixty-five percent of the children under five

Child Care as Infrastructure: Lessons from the Pace Layer Framework, CAPITA (Dec. 8, 2022), https://capita.org/childcare-as-infrastructure [https://perma.cc/NC6P-2ESV] (demonstrating the institutional benefits of conceptualizing childcare as part of the nation's infrastructure); *The First Five Things to Know About: Child Care Is Infrastructure*, FIRST FIVE YEARS FUND (Sept. 25, 2024), https://www.ffyf.org/resources/2024/09/the-first-five-things-to-know-about-child-care-is-infrastructure [https://perma.cc/WG59-XCH2] (noting several pieces of legislation introduced in Congress that aimed to redefine childcare as a part of American infrastructure); *Care as Labor, Care as Infrastructure*, LPE PROJECT (Nov. 8, 2021), https://lpeproject.org/events/care-as-labor [https://perma.cc/4Q32-CAVZ] (announcing events that discussed care work as part of infrastructure); *Child Care Is Infrastructure: Evidence from Universal Pre-K*, WHITE HOUSE: COUNCIL OF ECON. ADVISERS (Sept. 27, 2024), https://bidenwhitehouse.archives.gov/cea/written-materials/2024/09/27/child-care-is-infrastructure-evidence-from-universal-pre-k [https://perma.cc/BTR8-ZYMD] (reporting on empirical evidence that shows the significant benefits of affordable childcare and universal pre-K).

15 *E.g.*, *Factsheet: What Does the Research Say About Care Infrastructure?*, *supra* note 14 (noting that increasing affordable childcare access increases labor force participation and productivity).

16 *See* RODRIK, *supra* note 8, at 1 (finding that industrial policy aims to create good jobs but is also motivated by "learning, technological, [and] national security considerations").

17 For example, Biden attempted to implement childcare, housing, and healthcare subsidies and universal pre-K across states in the Build Back Better Act, but those provisions were never implemented. *See* Li Zhou, *How Democrats Plan to Overhaul Taxes, Climate Spending, and Health Care Before the Midterms*, VOX (July 28, 2022), https://www.vox.com/23281547/build-back-better-joe-manchin-inflation-reduction-act [https://perma.cc/UA7K-T3PC] (describing the limited spending on healthcare and climate in the Build Back Better Act); Tami Luhby & Katie Lobosco, *Here's What's in Biden's Build Back Better Plan*, CNN (Nov. 19, 2021, 9:47 AM), https://www.cnn.com/2021/09/12/politics/house-reconciliation-package-explainer [https://perma.cc/3ZAG-6R3Q] (describing the Build Back Better Act as including, among other things, provisions relating to childcare, housing, healthcare subsidies, and universal pre-K); Alan Fram, *Manchin, Key Dem, Says Build Back Better Bill Is 'Dead'*, AP NEWS (Feb. 1, 2022, 4:04 PM), https://apnews.com/article/joe-biden-business-environment-and-nature-environment-joe-manchin-c2e743dbb3978a9e780779fa4fec09b7 [https://perma.cc/Q2SZ-LW7Q] (indicating major portions of the Build Back Better Bill would not pass the Senate).

18 *See infra* Part II.

19 We use the term city as defined by the United States Postal Service to include any town that may appear in an address. *See USPS City Versus Census Geography*, U.S. CENSUS BUREAU (Oct. 8, 2021), https://www.census.gov/programs-surveys/geography/guidance/geo-areas/usps_census_city.html [https://perma.cc/PRZ5-BD4R]. These areas are larger than census

years old live either in "deserts" with no childcare[20] or in underserved cities where only half the children or fewer can access childcare.[21] Cities with less childcare availability also have lower labor supply, as measured by total labor force participation (LFP), female LFP, employment rate, and the share of children under six with all parents in the labor force. Our analysis does not establish a causal connection between childcare availability and labor supply[22] but does raise the possibility that investment in the childcare industry would increase overall labor productivity.

We finally argue that in order to be effective, industrial policy must refocus and reprioritize.[23] First, markets that support labor productivity should be subsidized or otherwise supported due to the dual benefits they provide for workers in those markets and for other workers.[24] Second, the primary goal of industrial policy should be creating and maintaining jobs.[25] Other motivations, such as decreasing dependence on imports, national security, and supply chain resilience, may conflict with the goal of job creation and support.[26] In those cases, jobs must remain the primary goal, since the growth of sectors that increase international competitiveness but do not create jobs, like artificial intelligence, decrease the fraction of benefits that accrue to the United States.

The Essay proceeds as follows. Part I describes the growth of modern industrial policy and its relationship with missing labor infrastructure. Part II introduces our empirical case study on childcare and discusses the implications of the results. Part III proposes a reformed policy agenda that would build industrial policy on a strong foundation of productive workers.

I
DRIVERS OF LABOR SHORTAGES & INDUSTRIAL POLICY

Workers are the backbone of the American economy. However, both labor force participation and productivity have been declining over the past

tracts or ZIP codes, which have been used in past research and may overstate the number of "desert" markets.

20 *U.S. Child Care Deserts*, CTR. FOR AM. PROGRESS (2020), https://childcaredeserts.org [https://perma.cc/N63R-EJRW].

21 *See infra* Section II.C.1.

22 We cannot claim causality in this analysis as we are not able to deal with the two main problems to estimate a causal effect: the potential reverse causality, that is the possibility that the level of employment or labor force participation determines the childcare coverage level in a city, and the bias arising from omitted variables.

23 *See infra* Part III.

24 *See Factsheet: What Does the Research Say About Care Infrastructure?*, *supra* note 14 (connecting affordable and accessible childcare to higher female labor force participation in the broader community).

25 *See* RODRIK, *supra* note 8, at 1–2 (suggesting that industrial policy must target the creation of "good jobs").

26 *See id.* at 5–6.

two decades.[27] The result is a significant shortage of labor, with high employment rates and little excess capacity to help the economy grow.[28] At the same time, policymakers have increased their usage of industrial policy with the hope of stimulating growth in sectors that benefit the public.[29] Attempts at industrial policy that do not address the drivers of labor shortages, however, are likely to struggle, since workers do not find it easy to mobilize and adapt to new industries.[30] In this Part, we diagnose some drivers of low labor supply and productivity and show their connection to new forms of industrial policy.

A. Missing Markets for Labor Infrastructure

In order for workers to be productive, they need access to services and goods that provide care and decrease the costs they incur to meet basic needs,[31] which we refer to as "labor infrastructure." However, markets for these services and goods are fraught with market failures and gaps. These include sectors such as health insurance, where markets have unraveled due to market failures and high aggregate risk,[32] housing, where rising prices and

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27 *See, e.g.*, Danial Lashkari & Jeremy Pearce, *The Mysterious Slowdown in U.S. Manufacturing Productivity*, LIBERTY ST. ECON. (July 11, 2024), https://libertystreeteconomics.newyorkfed.org/2024/07/the-mysterious-slowdown-in-u-s-manufacturing-productivity [https://perma.cc/6AB2-GZ9J] (finding that labor productivity has slowed in the past two decades); Andreas Hornstein, Marianna Kudlyak, Brigid Meisenbacher & David A. Ramachandran, *How Far Is Labor Force Participation from Its Trend?*, FED. RSRV. OF S.F. (Aug. 14, 2023), https://www.frbsf.org/research-and-insights/publications/economic-letter/2023/08/how-far-is-labor-force-participation-from-its-trend [https://perma.cc/82WW-73JP] (finding that labor force participation has dropped since the COVID-19 pandemic); *Labor Force Participation Rate*, FED. RSRV. OF ST. LOUIS, https://fred.stlouisfed.org/series/CIVPART [https://perma.cc/6KD9-CLNK] (reporting decreasing labor force participation after a peak in 2000).

28 *See* Michael J. Handel, *Labor Shortages: What Is the Problem?*, 59 INTERECONOMICS 136, 138 (2024) (finding that the ratio of job seekers to vacancies has been at unprecedented lows, indicating a shortage over the past five to six years); Melhorn, *supra* note 9 (explaining that even though the workforce is increasing in size, there are insufficient workers to fill the job openings).

29 *See, e.g.*, Shih, *supra* note 2; Siripurapu & Berman, *supra* note 2 (discussing recent U.S. investments into industries like manufacturing, semiconductors, and electric vehicles).

30 *See* Adam Thierer, *The Challenge of Retraining Workers for an Uncertain Future*, MERCATUS CTR. (July 27, 2018), https://www.mercatus.org/economic-insights/expert-commentary/challenge-retraining-workers-uncertain-future [https://perma.cc/LQL6-ARAK] (arguing that when "jobs and business models [are] rendered obsolete" workers have difficulty transitioning to new jobs).

31 Note that in this work, we rely on the assumption that policymakers want to reallocate the economy's resources to sectors of production that require some paid workers. The authors do not take a stance on whether this is a worthwhile goal. However, it is important to acknowledge that there is an alternative normative goal that policymakers may want to achieve—that is, to allow workers to cut back on hours or end their participation in the paid labor force and to spend that time caring for children or vulnerable adults.

32 *See, e.g.*, Melissa De Witte, *How Dropouts Could Unravel Obamacare*, STAN. GRADUATE SCH. OF BUS. (June 20, 2018), https://www.gsb.stanford.edu/insights/how-dropouts-could-unravel-

declining credit access have put homeownership out of the reach of large fractions of the population,[33] and care work, which has had documented undersupply for decades in areas that are labeled "deserts."[34] These missing markets hollow out the infrastructure workers need to participate in the labor force and be productive, and may need to be addressed with policy changes.

One of the most high-profile examples of missing markets addressed by federal policy in the past twenty years is in health insurance. Prior to the Affordable Care Act of 2010 (ACA), health insurance was widely unavailable for individuals who did not qualify for employer-based insurance or for Medicaid, with 46.5 million (or 17.8% of the population) lacking insurance during the recession.[35] The most common explanation for this market failing to exist was that it had suffered from asymmetric information. The mechanism is that insurance companies expect high healthcare costs from uninsured Americans, and charge extremely high premiums to make these plans profitable.[36] Those who choose to buy more insurance at these high prices are disproportionately likely to spend a great deal on healthcare costs, a phenomenon labeled "adverse selection."[37] As a result, insurance companies have even higher costs than anticipated, leading them to raise premiums or discourage high-risk insured people from joining their plans.[38] Ultimately, the insurance company would prefer not to offer insurance at all. This phenomenon is called a "death spiral" and has been documented in insurance plans offered before the introduction of the ACA.[39]

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obamacare [https://perma.cc/9ECL-XVUY] (describing the continued threat posed to the Affordable Care Act by enrollees strategically entering or leaving the market); Gabriel Scheffler, *The Ghosts of the Affordable Care Act*, 101 WASH. U. L. REV. 791, 805–06 (2024) (noting that the ACA persists only because it has lost several original provisions, including the individual mandate, the contraceptive coverage mandate, and other provisions).

33 *See* Anthony A. DeFusco, Stephanie Johnson & John Mondragon, *Regulating Household Leverage*, 87 REV. ECON. STUD. 914, 914 (2020) (showing that rules increasing regulatory costs on high-risk loans decreased credit access, reducing the quantity of loans).

34 *See* Melhorn, *supra* note 9 (discussing long-standing deficiencies in access to childcare); *U.S. Child Care Deserts*, *supra* note 20 (using the label "desert").

35 Rachel Garfield, Kendal Orgera & Anthony Damico, *The Uninsured and the ACA: A Primer - Key Facts About Health Insurance and the Uninsured Amidst Changes to the Affordable Care Act*, KFF (Jan. 25, 2019), https://www.kff.org/report-section/the-uninsured-and-the-aca-a-primer-key-facts-about-health-insurance-and-the-uninsured-amidst-changes-to-the-affordable-care-act-how-many-people-are-uninsured [https://perma.cc/ZD3P-DH9G].

36 *See* Gary Claxton, Larry Levitt & Karen Pollitz, *Pre-ACA Market Practices Provide Lessons for ACA Replacement Approaches*, KFF (Feb. 16, 2017), https://www.kff.org/health-costs/issue-brief/pre-aca-market-practices-provide-lessons-for-aca-replacement-approaches [https://perma.cc/44ND-QG3T] (explaining that, prior to the ACA, insurers used health screenings to charge applicants higher premiums).

37 *See* David M. Cutler & Richard J. Zeckhauser, *Adverse Selection in Health Insurance*, 1 F. FOR HEALTH ECON. & POL'Y, Jan. 1998, at 1.

38 *See id.* at 10 (describing market inefficiencies that arise from insurers' plan manipulation, including trying to select a generally healthier pool of insured people and reduce risk).

39 *E.g.*, David M. Cutler & Sarah J. Reber, *Paying for Health Insurance: The Trade-Off*

The ACA originally aimed to fill this gap by limiting insurance companies from rejecting potential policyholders with preexisting conditions, mandating that uninsured individuals purchase insurance or pay a fine, and regulating the coverage provided by ACA plans to avoid significant gaps in care.[40] A variety of challenges beleaguered the program and ultimately led to the mandate being effectively removed.[41] The resulting programs were still successful in insuring a significant portion of Americans.[42] Access to insurance helped these individuals access care and also likely alleviated significant financial worries related to healthcare costs.[43] By bringing more patients in for preventive care, the ACA likely resulted in growth of the healthcare industry.[44] Certainly, the ACA helped private insurance companies gain more customers, supporting the insurance sector.

Another missing insurance market has arisen due to the epidemic of disasters limiting the availability of homeowner's insurance across the country. New reports have shown a rapid rise in insurance prices in areas with high fire, flood, earthquake, and hurricane risk.[45] A significant and growing fraction of homeowners cannot obtain insurance at all, which not

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Between Competition and Adverse Selection, 113 Q.J. ECON. 433, 451–53 (1998) (showing the "death spiral" at Harvard as an example).

40 Scheffler, *supra* note 32, at 793–94.

41 *See, e.g.*, Christine Eibner & Sarah Nowak, *The Effect of Eliminating the Individual Mandate Penalty and the Role of Behavioral Factors*, COMMONWEALTH FUND (July 11, 2018), https://www.commonwealthfund.org/publications/fund-reports/2018/jul/eliminating-individual-mandate-penalty-behavioral-factors [https://perma.cc/H9BX-CXMC] (describing the diminution of the individual mandate); Jonathan Gruber, *Health Care Reform Without the Individual Mandate*, CTR. FOR AM. PROGRESS (Feb. 9, 2011), https://www.americanprogress.org/article/health-care-reform-without-the-individual-mandate [https://perma.cc/P5AW-454J] (describing legal challenges to and public disapproval of the individual mandate).

42 Nearly 50 million unique individuals have been enrolled in ACA health plans over the past 10 years. *U.S. Department of the Treasury Releases New Data Showing Nearly 50 Million Americans Have Been Covered Through Affordable Care Act Health Insurance Marketplaces Since 2014*, U.S. DEP'T OF THE TREASURY (Sept. 10, 2024), https://home.treasury.gov/news/press-releases/jy2567 [https://perma.cc/N28B-GKQB].

43 *See* Anna L. Goldman, Steffie Woolhandler, David U. Himmelstein, David H. Bor & Danny McCormick, *Out-of-Pocket Spending and Premium Contributions After Implementation of the Affordable Care Act*, 178 JAMA INTERNAL MED. 347, 354 (2018) (finding out-of-pocket spending decreased for lowest-, low-, and middle-income households after the implementation of the Affordable Care Act).

44 *See* Brian Blase, *The ACA Is Making Health Insurers Much Richer*, PARAGON HEALTH INST. (Mar. 20, 2024), https://paragoninstitute.org/newsletter/the-aca-is-making-health-insurers-much-richer [https://perma.cc/QHU9-E46L] (demonstrating evidence that health insurance and healthcare sectors have benefited from ACA subsidies).

45 *E.g.*, *U.S. Department of the Treasury Report: Homeowners Insurance Costs Rising, Availability Declining as Climate-Related Events Take Their Toll*, U.S. DEP'T OF THE TREASURY (Jan. 16, 2025), https://home.treasury.gov/news/press-releases/jy2791 [https://perma.cc/T6PL-ZBQP] (describing how homeowner's insurance has increased in price at 8.7% faster rate than inflation, with even higher premiums in areas with high climate risk).

only impacts them directly but also harms real estate sales and contributes to neighborhood devaluation.[46] Ultimately, a portion of the costs of missing insurance markets is borne by the government, which will have to pay for a larger fraction of uninsured losses. In choosing sectors for subsidies or other forms of support, however, neither the Biden nor Trump administrations focused on insurance.

Even in the absence of asymmetric information, however, many markets have suffered from a mismatch between buyers' *ability* to pay and suppliers' cost of production. In some markets, such as housing, the result is that a fraction of every community is locked out of ownership due to high prices or lack of credit availability. Governments intervene in these markets regularly, such as by providing subsidized mortgages through the Federal Housing Administration (FHA) and implicit guarantees through the Government Sponsored Enterprises (GSEs).[47] At the same time, regulation in the aftermath of the 2008 financial crisis, including the Ability-to-Repay/Qualified Mortgage (ATR/QM) rules implemented in 2013, have limited the supply of private mortgages, with particular impacts on vulnerable communities.[48] Moreover, state and local restrictions on building have restricted the supply of housing, keeping housing costs high.[49] These policies and market gaps impact many participants in real estate markets, including homeowners, renters, landlords, builders, lenders, and agents. Yet, housing is largely excluded from industrial policy discussions.

In other markets, such as care work, the result is a patchwork of availability across geographies, with some market "deserts" being formed where no service is available at all. Documentation of deserts created where a particular good or service is unavailable has been ongoing for multiple decades, with the alarm first raised about food "deserts."[50] Though this term

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46 *See id.*

47 *See* Wayne Passmore, *The GSE Implicit Subsidy and the Value of Government Ambiguity*, 33 REAL EST. ECON. 465, 465 (2005) (discussing the various ways the federal government "implicitly backs" Fannie Mae and Freddie Mac); KATIE JONES, CONG. RSCH. SERV., RS20530, FHA-INSURED HOME LOANS: AN OVERVIEW (2012) (providing a summary of the goals and structure of the FHA mortgage insurance program).

48 *See* DeFusco, Johnson & Mondragon, *supra* note 33, at 917–18 (estimating that the ATR/QM rules "reduced the total amount of mortgage credit by at least $600 million in the year [they were] implemented"). High-leverage mortgages tend to be taken out by more vulnerable communities.

49 *See* Nathaniel Meyersohn, *The Invisible Laws that Led to America's Housing Crisis*, CNN BUS. (Aug. 5, 2023, 3:12 AM), https://edition.cnn.com/2023/08/05/business/single-family-zoning-laws/index.html [https://perma.cc/WV62-WYFD] ("Strict single-family zoning regulations limited housing supply, artificially raised prices, squandered the dream of homeownership for future generations, and blocked families from moving into neighborhoods with better schools and job opportunities . . . .").

50 *See* Allison E. Karpyn, Danielle Riser, Tara Tracy, Rui Wang & Ye Shen, *The Changing Landscape of Food Deserts*, 44 UNSCN NUTRITION 46, 46 (2019) (explaining that the Scottish Nutrition Task Force coined the term in 1995); Renee E. Walker, Christopher R. Keane & Jessica

has become outdated, researchers and policymakers originally set out to document the existence of areas where fresh and healthy food options were limited.[51] Some of these areas were simply physically remote, such as highly rural areas, but others were in urban areas and often were accompanied by poverty and other access issues.[52] Food was just the first of many markets where deserts have been identified, however, including healthcare,[53] books,[54] and broadband.[55] Each desert often coexists with poverty, worsening the welfare implications of these missing markets. A commonality across these deserts is that additional supply has positive externalities for society, even if the individual customer cannot pay enough to afford those services. For example, preventive healthcare has benefits for individuals,[56] but also enables effective childcare,[57] productive labor, and the smooth running of local business.[58] Despite calls for targeted "place-based" policies to fill these

G. Burke, *Disparities and Access to Healthy Food in the United States: A Review of Food Deserts Literature*, 16 HEALTH & PLACE 876, 876 (2010).

51 *See, e.g.*, Lela Nargi, *Critics Say It's Time to Stop Using the Term "Food Deserts"*, THE COUNTER (Sept. 16, 2021, 12:40 PM), https://thecounter.org/critics-say-its-time-to-stop-using-the-term-food-deserts-food-insecurity [https://perma.cc/6V2X-934G] (describing criticism of the term and now-favored alternatives including "low-income" and "low-access"); *Communities with Limited Food Access in the United States*, ANNIE E. CASEY FOUND. (May 27, 2025), https://www.aecf.org/blog/communities-with-limited-food-access-in-the-united-states [https://perma.cc/UM2L-L9NJ] (describing the term "food desert" as both misleading, as it suggests that distance to grocery stores rather than supermarket redlining and residential segregation causes access issues, and narrow, as it does not account for food quality).

52 *See* Karpyn, Riser, Tracy, Wang & Shen, *supra* note 50, at 48 (noting that "racial and economic disparities in food access persist across the country"); *Communities with Limited Food Access in the United States*, *supra* note 51 (articulating that both urban and rural areas can suffer from food access issues, and rural areas tend to require greater distances from a supermarket to meet the definition of a "low-access" census tract).

53 *See* Monica G. Brînzac, Ellen Kuhlmann, Gilles Dussault, Marius I. Ungureanu, Răzvan M. Chereches & Cătălin O. Baba, *Defining Medical Deserts—An International Consensus-Building Exercise*, 33 EUR. J. PUB. HEALTH 785, 785 (2023) (noting that "[m]edical deserts represent a pressing public health and health systems challenge").

54 *See* Susan B. Neuman & Naomi Moland, *Book Deserts: The Consequences of Income Segregation on Children's Access to Print*, 54 URB. EDUC. 126, 126 (2019) (finding "stark disparities in access to print for those living in concentrated poverty" and arguing that "such neighborhoods constitute 'book deserts'").

55 *See* Nick Mathews & Christopher Ali, *Desert Work: Life and Labor in a News and Broadband Desert*, 26 MASS COMMC'N & SOC'Y 727, 727 (2023) (arguing that "life in a news and broadband desert requires a substantial amount of labor to obtain the local information and connectivity many take for granted").

56 *See generally* Ronald Loeppke, *The Value of Health and the Power of Prevention*, 1 INT'L J. WORKPLACE HEALTH MGMT. 95 (2008).

57 *See Pediatric Preventative Care: Building a Healthy Foundation for Your Child*, TKZ PEDIATRICS, https://www.tkzpediatrics.com/blog/pediatric-preventative-care-building-a-healthy-foundation-for-your-child [https://perma.cc/4UG6-786R] ("Pediatric preventive care is central to helping children build a foundation for lifelong health and well-being.").

58 *See Importance and Benefits of Preventive Medical Care*, AGAPE FAM. HEALTH (June 21, 2023), https://www.agapefamilyhealth.org/benefits-of-preventive-medical-care [https://perma.cc/L4SE-PDNG] (discussing the improved productivity and reduced absenteeism

gaps, no widespread policy effort has made significant progress in eliminating deserts.[59]

In this Essay, we focus on one important example of market deserts—care for children below the age of six. High profile projects by journalists, think tanks, and academic researchers have documented the scarcity of childcare in a variety of markets across the United States.[60] The Center for American Progress developed a travel-time methodology, which assigns a market as a desert when there are children under the age of six in a Census block group but no childcare providers within a simulated twenty-minute drive time radius around that block group.[61] Licensed childcare provider information is collected from state databases. The Center for American Progress finds that states' incidence of childcare deserts ranges from 23% to more than 75% of neighborhoods.[62] Many more live in areas where childcare is scarce, meaning that there are significantly fewer providers than there are

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that preventive medical care enables).

[59] *See, e.g.*, Rachel Engler-Stringer, Daniel Fuller, A.M. Hasanthi Abeykoon, Caitlin Olauson & Nazeem Muhajarine, *An Examination of Failed Grocery Store Interventions in Former Food Deserts*, 46 HEALTH EDUC. & BEHAV. 749, 753 (2019) (discussing reasons why grocery store interventions in food deserts have often failed); David Schleicher, Why We Can't Have Nice Place-Based Policies: *A Review of David Wessel's Only the Rich Can Play*, NISKANEN CTR. (Dec. 7, 2021), https://www.niskanencenter.org/why-we-cant-have-nice-place-based-policies-a-review-of-david-wessels-only-the-rich-can-play [https://perma.cc/KK8W-GV4W] (arguing political interests have rendered place-based policies such as Opportunity Zones ineffective).

[60] *See* RASHEED MALIK, KATIE HAMM, LEILA SCHOCHET, CRISTINA NOVOA, SIMON WORKMAN & STEVEN JESSEN-HOWARD, CTR. FOR AM. PROGRESS, AMERICA'S CHILD CARE DESERTS IN 2018, at 8 (2018), https://www.americanprogress.org/wp-content/uploads/sites/2/2018/12/AmericasChildCareDeserts20182.pdf [https://perma.cc/B8E4-7QXD] (describing analysis finding that approximately half of the United States has "too few child care options"); DIONNE DOBBINS, JESSICA TERCHA, MICHELLE MCCREADY & ANITA LIU, CHILD CARE AWARE OF AMERICA, CHILD CARE DESERTS: DEVELOPING SOLUTIONS TO CHILD CARE SUPPLY AND DEMAND 2 (Sept. 2016), https://dl.icdst.org/pdfs/files4/70de9a63b7aac0d1c6312b2b2a837de7.pdf [https://perma.cc/Q9VE-EQ6N] (finding that childcare deserts are "especially prevalent in low-income communities, rural communities, among families of color, and among families with irregular or nontraditional work schedules"); Ellen Prusinski, Patten Priestley Mahler, Melissa Collins & Holly Couch, *Strengthening Early Childhood Education and Care in a "Childcare Desert"*, 51 EARLY CHILDHOOD EDUC. J. 1317, 1317 (2022) (describing a "profound shortage" of early childhood education and care centers in many communities).

[61] RASHEED MALIK, WON F. LEE, AARON SOJOURNER & ELIZABETH E. DAVIS, CTR. FOR AM. PROGRESS, MEASURING CHILD CARE SUPPLY USING THE ENHANCED TWO-STAGE FLOATING CATCHMENT AREA METHOD (2020), https://cdn.americanprogress.org/content/uploads/2020/06/18081719/Child-Care-Deserts-Methodology.pdf [https://perma.cc/SR75-D6KW] (describing a two-stage, drive-time-based methodology using a twenty-minute catchment radius around family and provider locations to measure access to childcare (citing Elizabeth E. Davis, Won F. Lee & Aaron Sojourner, *Family-Centered Measures of Access to Early Care and Education*, 47 EARLY CHILDHOOD RSCH. Q. 472 (2019)). *But see* Davis, Lee & Sojourner, *supra*, at 484 (critiquing area-based "child care desert" classifications as overly simplistic and proposing a family-centered, distance-based measure that accounts for both travel time and provider costs).

[62] MALIK ET AL., *supra* note 60, at 3.

children. Rural and low-income areas face the largest gaps in access to childcare.[63] The research further documents that maternal labor force participation is lower in childcare deserts.[64] The existing analysis suggests that childcare deserts undermine the infrastructure of labor and diminish the ability of entire communities to participate in the economy.

However, existing work on childcare deserts leaves open several significant questions. First, challenges with childcare data in California mean that researchers were unable to get a complete picture of the childcare market, suggesting that too many California tracts were labeled deserts based on the study's methodology.[65] Second, the work does not address whether total labor force participation is higher when more childcare is available. A larger number of mothers in the labor force could be offset by fewer men or childless workers. Third, little is known about the relative impact of childcare, compared to income, housing prices, demographics, and other variables that influence the efficacy of labor in a particular market.[66]

Looking across the missing markets that have been documented and targeted by federal policy through the years, an important commonality begins to emerge. When these markets are subsidized or regulated, the motivation is often direct redistribution rather than international competitiveness or resilience. Yet, the fact that private markets fail to provide essential services like childcare and goods such as housing to the American people has significant impacts on the productivity of the labor force and can limit economic growth.

B. Foundations of Industrial Policy

Despite their role in supporting key sectors of the American economy, interventions that build labor infrastructure like the ACA, subsidized mortgages, and funding for childcare are not part of the latest trend—the growth of industrial policy in the United States. Industrial policy

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63 *Id.* at 8 (finding that "rural census tracts are the most likely to be classified as child care deserts, with 59 percent of rural communities meeting that definition" and "neighborhoods in the top income quintile are less likely to be undersupplied within each geographic category").

64 *Id.* at 12–13 (finding that "child care deserts are associated with labor force participation rates for mothers with young children that are roughly 3 percentage points lower than the participation rates in neighborhoods with adequate child care supply").

65 *See id.* at 33; *see also infra* Part II.B.

66 Note that previous work on childcare availability, as well as our own in this paper, cannot establish on its own that future reforms that increase childcare availability would definitively increase labor force participation. Parents who are not utilizing childcare may be doing so out of the conviction that home care is superior in quality to institutional care or may otherwise be unaffected by the price or quantity of childcare available. That being said, establishing a strong relationship between labor force participation and childcare availability, especially conditional on controls for demographics and local characteristics that we would expect to correlate with insensitivity to price or supply, provides *suggestive* evidence that increasing childcare availability or lowering cost would increase labor force participation.

encompasses a set of policy tools with a long and controversial history. Economists have defined industrial policy as government actions that protect and support domestic industries, often focused on specific sectors that serve policy goals such as decreased reliance on foreign imports, increasing job opportunities, or increasing national security.[67] Well-publicized recent examples include subsidies to specific industries, such as the Inflation Reduction Act subsidies to the clean energy sector,[68] and tariffs, such as those announced and later negotiated by President Trump on a variety of countries worldwide.[69] Industrial policy is popular worldwide, and has been credited with some successes such as China's staggering growth over the last century.[70] In the United States, many scholars and policymakers have been critical of domestic industrial policy, largely due to concerns that government intervention will inefficiently divert resources towards imperfectly selected "winner[]" firms or sectors and away from "losers[,]" resulting in an inefficient allocation of resources.[71] Despite this, industrial policy has recently seen a bipartisan rise in popularity.[72]

The American approach to the development of industry has historically prioritized a laissez-faire approach, which allows each firm to make its own decisions on efficient production subject to minimal government intervention.[73] The intuition behind this approach was a focus on maximal growth for the economy. Firms understand their businesses better than government officials can and are in the best position to optimize costs and

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67 *See* Juhász, Lane & Rodrik, *supra* note 1, at 216–17.

68 *See* Josh Bivens, *The Inflation Reduction Act Finally Gave the U.S. a Real Climate Change Policy*, ECON. POL'Y INST. (Aug. 14, 2023, 3:16 PM), https://www.epi.org/blog/the-inflation-reduction-act-finally-gave-the-u-s-a-real-climate-change-policy [https://perma.cc/5GCS-YDXD].

69 *See Fact Sheet: President Donald J. Trump Announces "Fair and Reciprocal Plan" on Trade*, WHITE HOUSE (Feb. 13, 2025), https://www.whitehouse.gov/fact-sheets/2025/02/fact-sheet-president-donald-j-trump-announces-fair-and-reciprocal-plan-on-trade [https://perma.cc/V4F8-AG48] (announcing a plan to impose reciprocal tariffs around the world).

70 *See* Juhász, Lane & Rodrik, *supra* note 1, at 215 (recounting the disagreement between sociologists, political scientists, and a few economists, as a group, with most mainstream economists over whether the Chinese state's strong hand drove industrialization, before finding certain industrial policies did drive structural change in China).

71 *See* Ruchir Agarwal, *Industrial Policy and the Growth Strategy Trilemma*, INT'L MONETARY FUND: FIN. & DEV. MAG. (Mar. 21, 2023), https://www.imf.org/en/Publications/fandd/issues/Series/Analytical-Series/industrial-policy-and-the-growth-strategy-trilemma-ruchir-agarwal [https://perma.cc/SD9E-CLJP].

72 *See* Naveen Siddiqui & Andrew Lautz, *Industrial Policy: Path to U.S. Competitiveness or Pitfall?*, BIPARTISAN POL'Y CTR. (Oct. 3, 2023), https://bipartisanpolicy.org/blog/industrial-policy-path-to-u-s-competitiveness-or-pitfall [https://perma.cc/R6PH-DUY6] (noting that there is "strong bipartisan interest in expanding U.S. industrial policy").

73 *See* Réka Juhász, Nathan Lane, Emily Oehlsen & Verónica C. Pérez, *New Measures Reveal a Growing Industrial Policy Divide*, VOXDEV (June 24, 2025), https://voxdev.org/topic/methods-measurement/new-measures-reveal-growing-industrial-policy-divide [https://perma.cc/3HHT-TUMM] (noting that "the age of laissez-faire economic policy is over," but questioning whether "rich countries ever practiced what they preached" in that regard).

production methods. Therefore, government intervention would likely distort firms from the most efficient use of resources, and limit growth. Economists generally supported regulation, taxes and subsidies, and other sector- or firm-specific intervention only when market failures[74] or competitive frictions[75] existed. Traditional market failures include externalities, in which one firm's behavior has negative or positive spillovers on other stakeholders who are not participants in the market. A classic example of an externality that justifies regulation is pollution.[76] Factories that emit pollutants into the air have negative impacts on those downwind from the factory, even if they are not factory owners, workers, or customers. The levels of pollutants chosen privately by factories are higher than those that would be chosen by a social planner who accounts for the potential impacts on the health and safety of surrounding communities. Taxes, quantity regulations, and cap-and-trade markets that limit pollutants may therefore be efficient.[77] When there are no identifiable market failures, however, traditional policy guidance would be to let the market develop efficiently.

Another case that generates consensus among economists to intervene in a market is the presence of anticompetitive practices. An ongoing example is the problem of Chinese dumping in the steel market. It is broadly accepted that China is distorting the global steel market by artificially increasing its supply.[78] This state-driven overproduction is achieved by providing large subsidies to local steel producers, which allows low-productivity companies to operate at a loss.[79] Many of these companies would not survive without support from the Chinese government.[80] Due to declining internal demand, China fails to consume the supply of locally produced steel, allowing the country to flood global markets with "cheap, heavily subsidized" steel,

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74 *See* Juhász & Lane, *supra* note 1, at 27 ("Economists have long studied, dissected, and taxonomized the market failures that might justify an industrial policy intervention.").

75 *See* Tirole, *supra* note 1, at i983 (describing how in the "good old days," targeted interventions addressed sectors where traditional competitive assumptions failed, such as natural monopolies).

76 *See* Vinod Thomas, *The Danger of Dismissing Market Failures*, BROOKINGS INST. (July 12, 2017), https://www.brookings.edu/articles/the-danger-of-dismissing-market-failures [https://perma.cc/8ESG-THJM] (arguing that "[g]overnment intervention is needed to stop the harmful spillovers of industries and individuals, such as water pollution or road congestion," as markets alone cannot fix these problems).

77 *See Cap and Trade vs. Taxes*, CTR. FOR CLIMATE & ENERGY SOLS. (Mar. 2009), https://www.c2es.org/wp-content/uploads/2009/03/climate-policy-memo-1-cap-and-trade-vs-taxes.pdf [https://perma.cc/H5ZD-SREB] (arguing that both taxes and cap-and-trade approaches can correct the failure of sources of greenhouse gas emissions to internalize their emissions' costs).

78 *See* Philip Luck & Evan Brown, *U.S. Steel and Aluminum Tariffs Won't Solve the Chinese Dumping Problem*, CTR. FOR STRATEGIC & INT'L STUD. (Feb. 14, 2025), https://www.csis.org/analysis/us-steel-and-aluminum-tariffs-wont-solve-chinese-dumping-problem [https://perma.cc/S2RQ-PFKQ] (describing China's overproduction of steel).

79 *See id.* (noting that "these subsidies allow low-productivity producers to operate at a loss").

80 *Id.*

thereby affecting producers all over the world.[81] Some countries have protested and adopted measures such as tariffs to protect their steel producers.[82] For example, the Trump administration recently announced that it would impose a twenty-five percent tariff on steel imports[83]—a call that has been echoed by a few countries such as South Korea[84] and Vietnam.[85]

Throughout the second half of the twentieth century and into the beginning of the twenty-first, laissez-faire industrial policy resulted in one widespread trend—globalization.[86] Manufacturing, information technology, and even customer service tasks were moved out of the United States and into jurisdictions perceived to be more efficient.[87] Asia, in particular, benefited from increased globalization, with China developing expertise in

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81 *Id.* ("As domestic demand for steel drops, China is flooding global markets with cheap, heavily subsidized exports—undercutting producers in the United States, Europe, and Asia."); *accord Steel Dumping in Latin America Reaches 'Alarming' Levels*, DIALOGUE EARTH, https://dialogue.earth/en/pollution/3372-steel-dumping-in-latin-america-reaches-alarming-levels [https://perma.cc/6GX8-G6R2] ("Cheap imports threaten to cause factory closures and job losses in Latin America's steel industry as China's surplus is 'dumped' in the region at prices domestic producers cannot compete with.").

82 *See* Sohrab Darabshaw, *A Blow to China's Steel Dumping Tactics: Triple Tariffs*, METALMINER (Apr. 24, 2024), https://agmetalminer.com/2024/04/24/china-tariffs-help-halt-steel-dumping [https://perma.cc/A85V-HYCC] (noting Indian and Mexican tariffs on Chinese steel, as well as protests against steel dumping by the European Union and Thailand).

83 Luck & Brown, *supra* note 78.

84 *See* Joyce Lee, Jihoon Lee & Lewis Jackson, *South Korea Provisionally Slaps Tariffs on Chinese Steel Plates for Dumping*, REUTERS (Feb. 20, 2025, 4:45 AM), https://www.reuters.com/markets/asia/south-korea-provisionally-slaps-tariffs-chinese-steel-plates-dumping-2025-02-20 [https://perma.cc/L8WY-5V64] (reporting on a newly imposed 38% tariff on Chinese steel plates).

85 *See* Amy Lv & Phuong Nguyen, *Vietnam to Impose Temporary Anti-Dumping Tariff on China Steel Products*, REUTERS (Feb. 21, 2025, 6:34 AM), https://www.reuters.com/markets/commodities/vietnam-says-impose-temporary-anti-dumping-tariff-hot-rolled-coil-steel-china-2025-02-21 [https://perma.cc/NE9L-NQ5D] (reporting on an imminent 27.83% tariff on Chinese steel products).

86 Trevor Sutton & Andy Green, *Adieu to Laissez-Faire Trade*, DEMOCRACY (Oct. 21, 2020, 2:00 PM), https://democracyjournal.org/arguments/adieu-to-laissez-faire-trade [https://perma.cc/8U8Y-RWGV] (stating that the "decades-long movement toward a more integrated global economy that has privileged investor rights and narrow ideas of efficiency" led to a "reordering of the global economy" best described as a "laissez-faire model of globalization"); Jeffrey A. Frieden, *From the American Century to Globalization*, *in* THE SHORT AMERICAN CENTURY 142 (Andrew J. Bacevich ed., 2012) (describing the trajectory of U.S. economic policy over the course of the latter half of the twentieth century, with globalization as its destination).

87 *See* Robert C. Feenstra & Gordon H. Hanson, *Globalization, Outsourcing, and Wage Inequality*, 86 AM. ECON. REV. 240 (1996) (on manufacturing); Mary Amiti & Shang-Jin Wei, *Service Offshoring and Productivity: Evidence from the US*, 32 WORLD ECON. 203 (2009) (on information technology and service industries).

precision technological manufacturing,[88] Vietnam[89] and Bangladesh[90] in clothing and textiles, and India[91] in technological support roles. Globalization transformed the American economy, resulting in many jobs lost and workers left with few options except to retrain, often at an advanced age.[92] Few limitations were placed on American companies that wanted to move a portion of their labor overseas, however.[93] Economists largely

88 *See* Richard Baldwin, *China Is the World's Sole Manufacturing Superpower: A Line Sketch of the Rise*, VOXEU: CTR. FOR ECON. & POL'Y RSCH. (Jan. 17, 2024), https://cepr.org/voxeu/columns/china-worlds-sole-manufacturing-superpower-line-sketch-rise [https://perma.cc/QZX5-56LD] (reporting that China first became a manufacturing giant due to globalization and has now moved its focus to sophisticated sectors including electronics and pharmaceuticals).

89 *See Why Vietnam Is the Ideal Hub for Clothing Manufacturing*, VINMAKE (2025), https://www.vinmake.com/insights/why-vietnam-is-the-ideal-hub-for-clothing-manufacturing [https://perma.cc/ZH7Z-7HEK] (reporting that Vietnam has become a "global leader in apparel production," attracting major global brands).

90 *See* Dina M. Siddiqi, *What's Happening in Bangladesh's Garment Industry?*, ECON. OBSERVATORY (Mar. 26, 2025), https://www.economicsobservatory.com/whats-happening-in-bangladeshs-garment-industry [https://perma.cc/N8NM-9MDP] (reporting that Bangladesh is now the world's second largest exporter of garments; in 1993, apparel amounted to less than 4% of the country's exports).

91 Jack Kelly, *The Globalization and Offshoring of U.S. Jobs Have Hit Americans Hard*, FORBES (Oct. 15, 2024, 6:30 AM) https://www.forbes.com/sites/jackkelly/2024/10/15/the-globalization-and-offshoring-of-us-jobs-have-hit-americans-hard [https://perma.cc/JG8P-SAV5] ("India has been a major destination for offshored white-collar jobs, particularly in software and back-offices services.").

92 *See id.* ("As jobs disappear, workers may find their skills are no longer in demand, requiring retraining or education to transition to new roles, as they face competition from global workers in many occupations."); Amitrajeet A. Batabyal, *International Trade Has Cost Americans Millions of Jobs. Investing in Communities Might Offset Those Losses*, THE CONVERSATION (Aug. 3, 2020, 7:59 AM), http://theconversation.com/international-trade-has-cost-americans-millions-of-jobs-investing-in-communities-might-offset-those-losses-143406 [https://perma.cc/TUP8-HE2G] (noting that the U.S. trade deficit with China resulted in the elimination of 3.7 million jobs between 2001 and 2018, 75% of which were in manufacturing); Sandra Buchholz, Annika Rinklake, Julia Schilling, Karin Kurz, Paul Schmelzer & Hans-Peter Blossfeld, *Chapter 1: Aging Populations, Globalization and the Labor Market: Comparing Late Working Life and Retirement in Modern Societies*, *in* AGING POPULATIONS, GLOBALIZATION AND THE LABOR MARKET 3, 16 (2011), https://www.elgaronline.com/edcollchap/edcoll/9781849803724/9781849803724.00008.xml [https://perma.cc/9MRN-4AV6] ("[In the U.S.A. and the U.K., o]lder workers have to undergo constant retraining in order to remain competitive on changing labor markets because they can expect only little support from the state.").

93 *See* Robert E. Scott, Valerie Wilson, Jori Kandra & Daniel Perez, *Botched Policy Responses to Globalization Have Decimated Manufacturing Employment with Often Overlooked Costs for Black, Brown, and Other Workers of Color*, ECON. POL'Y INST. (Jan. 31, 2022), https://www.epi.org/publication/botched-policy-responses-to-globalization [https://perma.cc/EZK4-3TCW] ("The mismanaged integration of the United States into the global economy has devastated U.S. manufacturing workers and their communities."); Jack Kelly, *The Globalization and Offshoring of U.S. Jobs Have Hit Americans Hard*, FORBES (Oct. 15, 2024, 6:30 AM), https://www.forbes.com/sites/jackkelly/2024/10/15/the-globalization-and-offshoring-of-us-jobs-have-hit-americans-hard [https://perma.cc/U87Z-GSVM] (stating that "[a] striking 66% of U.S. companies outsource at least one department," which translates to "approximately 300,000 American jobs being outsourced annually," and "the U.S. market alone generates $62 billion of the

supported free trade policies and other forms of open borders that would allow firms to most efficiently utilize resources worldwide.[94] The justification was that American firms that made more money through globalization would pay taxes to the U.S. government and would reinvest that money in American society, ultimately benefiting the American people.[95] Moreover, if American workers were not as efficient as Asian workers in certain jobs, it was globally more efficient to reallocate American workers to sectors where they had a comparative advantage.

Despite the efficiencies of globalization, however, displaced workers and a growing dissatisfaction with American corporations led to the tide turning against international interdependence. Retrospective economic research studied the impact of globalization based on the "China Shock," referring to the flood of inexpensive exports that followed the 2001 addition of China to the World Trade Organization.[96] The research showed that the resulting reallocation of manufacturing jobs to China had severe and long-lasting consequences for communities across the United States that previously depended on manufacturing.[97] In the same time frame, unemployment increased[98] and white men faced a decrease in their life

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$92.5 billion global outsourcing industry").

94 *See* Milton Friedman & Rose D. Friedman, *The Case for Free Trade*, HOOVER INST. (Oct. 30, 1997), https://www.hoover.org/research/case-free-trade [https://perma.cc/3UXZ-494E] ("Ever since Adam Smith there has been virtual unanimity among economists, whatever their ideological position on other issues, that international free trade is in the best interests of trading countries and of the world.").

95 *See id.*; Matt Walsh, Opinion, *Noted Economists Past and Present on Tariffs and Free Trade*, BUS. OBSERVER (May 6, 2025, 4:40 AM), https://www.businessobserverfl.com/news/2025/may/06/opinion-noted-economists-past-present-tariffs-free [https://perma.cc/3W53-C97Q]; Thomas Baunsgaard & Michael Keen, *Tax Revenue and (or?) Trade Liberalization*, 94 J. PUB. ECON. 563, 572 (2010) (finding high income countries have "managed to offset reductions in trade tax revenues by increasing their domestic tax revenues").

96 *See* David H. Autor, David Dorn & Gordon H. Hanson, *The China Syndrome: Local Labor Market Effects of Import Competition in the United States*, 103 AM. ECON. REV. 2121, 2122 (2013); Peter Dizikes, *Q&A: David Autor on the Long Afterlife of the "China Shock"*, MIT NEWS (Dec. 6, 2021), https://news.mit.edu/2021/david-autor-china-shock-persists-1206 [https://perma.cc/DEJ4-NVC7].

97 *See* Autor, Dorn & Hanson, *supra* note 96 (finding that rising Chinese imports caused "higher unemployment, lower labor force participation, and reduced wages in local labor markets that house import-competing manufacturing industries"); Greg Rosalsky, *Why Economists Got Free Trade with China So Wrong*, NPR (Feb. 11, 2025, 6:30 AM), https://www.npr.org/2025/02/11/g-s1-47352/why-economists-got-free-trade-with-china-so-wrong [https://perma.cc/85ER-T24L] (reporting that following the China Shock, "well over a million manufacturing jobs" were lost to China, creating "miniature depressions in communities around the country," with former manufacturing workers still not recovered by 2019).

98 *See Industrial Policy vs. Free Trade: Ian Fletcher on Rebuilding High-Value Industries*, ADEPT ECON. (Jan. 30, 2025), https://adepteconomics.com.au/industrial-policy-vs-free-trade-ian-fletcher-on-rebuilding-high-value-industries [https://perma.cc/B9LL-52ZP].

expectancies for the first time in recent history.[99] At the same time, corporations were taking advantage of international tax rules to keep money outside the border and avoid contributing to public goods in the United States.[100] Donald Trump won his first term in office by promising to "Make America Great Again."[101] Trump promised that the United States would become less dependent on international trade, particularly with China.[102] The COVID-19 crisis and the war in Ukraine, both of which limited imports into the United States, drove up prices in the United States[103] and resulted in Biden moving in the same direction as Trump—away from the longstanding American tradition of free trade and limited intervention into U.S. industry.[104]

In the shadow of these developments, a new industrial policy has been on the rise. Since 2017, both the Trump and Biden administrations have followed a two-pronged approach to industrial policy. First, both administrations have increased the use of discretionary tariffs, resulting in trade wars with China as well as with other trading partners.[105] Second,

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99 *See* Mary Caffrey, *Study Reveals Declining Life Expectancy Among White Americans That Defies Easy Answers*, AJMC (July 11, 2019), https://www.ajmc.com/view/study-reveals-declining-life-expectancy-among-white-americans-that-defies-easy-answers [https://perma.cc/2RD2-9WHC] (discussing rising white mortality).

100 *See* Adam N. Michel, *Bold International Tax Reforms to Counteract the OECD Global Tax*, CATO INST. (Feb. 13, 2024), https://www.cato.org/sites/cato.org/files/2024-02/policy-analysis-968.pdf [https://perma.cc/BV6N-XAKM] (noting the Tax Cuts and Jobs Act was in part motivated by the United States having the highest corporate tax rate, as before 2017, "the Joint Committee on Taxation estimated US firms held about $2.6 trillion in untaxed foreign earnings overseas as they tried to avoid the US tax system"); James R. Hines Jr., *Corporate Taxation and International Competition* 6 (Univ. of Mich. Ross Sch. of Bus., Working Paper No. 1026, 2005), https://deepblue.lib.umich.edu/bitstream/handle/2027.42/39147/1026.pdf [https://perma.cc/WD64-QXZD] (discussing corporations' practice of shifting accumulating income to low-tax countries and deductions in high-tax countries).

101 *See* Karen Tumulty, *How Donald Trump Came Up with 'Make America Great Again'*, WASH. POST (Jan. 18, 2017) https://www.washingtonpost.com/politics/how-donald-trump-came-up-with-make-america-great-again/2017/01/17/fb6acf5e-dbf7-11e6-ad42-f3375f271c9c_story.html [https://perma.cc/A68Y-FKK6] (telling the history of his slogan and how it helped Donald Trump win the Presidency).

102 *See* Simina Mistreanu, *A Timeline of US-China Tit-for-Tat Tariffs Since Trump's First Term*, AP (Apr. 5, 2025, 5:04 AM), https://apnews.com/article/china-us-tariffs-timeline-trump-xi-1eeed2865dc7b14e23d7eb8069ba41ea [https://perma.cc/D2DC-QH6S] (summarizing the history of trade relations with China, including Trump's first-term efforts and campaign promises).

103 *See Inflation, Consumer Prices for the United States*, FED. RSRV. BANK OF ST. LOUIS, https://fred.stlouisfed.org/series/FPCPITOTLZGUSA [https://perma.cc/ULK9-KNK2]; Harry Nitzberg, *Stimulus Checks, World Events, or Import Shortages: What Causes Import Inflation?*, BUREAU LAB. STAT.: MONTHLY LAB. REV. (May 2024), https://www.bls.gov/opub/mlr/2024/beyond-bls/stimulus-checks-world-events-or-import-shortages-what-causes-import-inflation.htm [https://perma.cc/UC2P-K2U7] (noting the causes of import inflation include global events, such as the pandemic and the Russia-Ukraine war).

104 *See* Bivens, *supra* note 68.

105 *See* Dorothy Neufeld, *Chart: The Average U.S. Tariff Rate (1890–2025)*, VISUAL CAPITALIST (Apr. 10, 2025), https://www.visualcapitalist.com/the-average-u-s-tariff-rate-since-

domestic policy has focused on directly subsidizing sectors that have been deemed crucial for American competitiveness. These include manufacturing, clean energy, infrastructure, and others.[106] Taken together, both domestic and foreign policy choices have increasingly prioritized American interests over global efficiency. Economists have expressed support for narrowly tailored government intervention, such as product-specific tariffs.[107] Moreover, economic theory suggests that industrial policy is justifiable in industries with existing market failures. For example, theory suggests that subsidies should be given to industries with high external returns to scale, meaning that the sector can be scaled effectively only when firms coordinate but not when one firm tries to grow unilaterally.[108] Yet, most economists have criticized sector-specific domestic policy that can result in inefficient allocation of resources and the need for uninformed government officials to "pick winners" among sectors or firms.[109]

1890 [https://perma.cc/BM2A-PUZN] (noting that Trump placed heavy reciprocal tariffs on roughly 100 countries); Justin Ho, *How Tariffs Compare in the Biden and Trump Eras*, MARKETPLACE (May 14, 2024), https://www.marketplace.org/story/2024/05/14/how-tariffs-compare-in-the-biden-and-trump-eras [https://perma.cc/3S4Y-ZUC3] (documenting Biden placing tariffs on $18 billion worth of imports from China); Chad P. Bown, *Trump's Trade War Timeline 2.0: An Up-to-Date Guide*, PETERSON INST. FOR INT'L ECON. (June 4, 2025, 10:00 AM), https://www.piie.com/blogs/realtime-economics/2025/trumps-trade-war-timeline-20-date-guide [https://perma.cc/UL8L-VWMZ] (recording various trade policies with many partners).

106 *See, e.g.*, Martin Chorzempa, *The CHIPS Act Already Puts America First. Scrapping It Would Poison the Well for US Investment.*, PETERSON INST. FOR INT'L ECON. (Mar. 27, 2025, 9:30 AM), https://www.piie.com/blogs/realtime-economics/2025/chips-act-already-puts-america-first-scrapping-it-would-poison-well [https://perma.cc/B5J5-PGBF] (noting that the CHIPS Act offered tax credits, grants, and loans that enticed semiconductor companies to manufacture in the United States); *Two Years Later: Funding from CHIPS and Science Act Creating Quality Jobs, Growing Local Economies, and Bringing Semiconductor Manufacturing Back to America*, U.S. DEP'T OF COM. (Aug. 9, 2024), https://www.commerce.gov/news/blog/2024/08/two-years-later-funding-chips-and-science-act-creating-quality-jobs-growing-local [https://perma.cc/AX4T-Y3UV] (describing the CHIPS Act as having stimulated strides in cutting-edge semiconductor manufacturing in the United States); David Rotman, *2022's Seismic Shift in US Tech Policy Will Change How We Innovate*, MIT TECH. REV. (Jan. 9, 2023), https://www.technologyreview.com/2023/01/09/1064735/us-tech-policy-changing-innovation [https://perma.cc/P7EK-MB7P] (describing some supporters of federal investments into infrastructure, scientific research, and manufacturing as motivated by speeding the green transition, others by national security concerns and the belief that these efforts will boost economic growth); Irwin, *supra* note 4 ("Biden has made revitalizing U.S. manufacturing central to his domestic political agenda – and his political identity.").

107 *See* Rosalsky, *supra* note 97 (noting David Autor's support for strategic tariffs on particular products and complementary public investment rather than broad-based tariffs).

108 This theory is known as external economies of scale. *See* Dominick Bartelme, Arnaud Costinot, Dave Donaldson & Andrés Rodríguez-Clare, *The Textbook Case for Industrial Policy: Theory Meets Data*, 133 J. POL. ECON. 1527, 1527 (2025) ("[S]ectors with relatively large external economies of scale should be subsidized at the expense of other sectors.").

109 *See* Rotman, *supra* note 106 ("[F]or decades now, free-market advocates have disparaged industrial policy as a foolhardy attempt to pick economic winners. Since the early 1980s and the era of Ronald Reagan, US politicians and many mainstream economists have disdained it.").

Recent empirical research on industrial policies worldwide may indicate mixed positive and negative effects.[110] There is little evidence that industrial policy consistently increases global efficiency, since the growth created in one country may be mirrored by losses in other countries. However, industrial policy has undeniably been effective in its intended goals of erecting barriers between trading partners and stimulating domestic industry. The U.S. experience since 2017 has borne out this view. By 2022, imports from China decreased by 5.3% relative to the 2017 baseline.[111] Legislation passed during the Biden administration, including the Inflation Reduction Act, the CHIPS and Science Act, and the Infrastructure Investment and Jobs Act (IIJA), is projected to create jobs in growing sectors[112] and may have helped decrease dependence on imported goods.[113] At the same time, economic growth has remained strong, suggesting that these policies have not caused short-term harms.[114]

The long-term effects of industrial policy, however, depend crucially on the sectors supported by industrial policy, as well as the specific methods of implementation. Currently, policymakers appear to choose which sectors to support based on a combination of domestic political allegiances and concerns about international competitiveness. For instance, the second Trump administration has already shown a willingness to prioritize artificial intelligence alongside the traditional industries supported in the first Trump administration, such as manufacturing.[115] During the Biden administration,

110 *See* Noah Smith, *A Few Economists Are Starting to Think Seriously About Industrial Policy*, NOAHPINION (Aug. 20, 2023), https://www.noahpinion.blog/p/a-few-economists-are-starting-to [https://perma.cc/5VSV-9ZNZ] (arguing that research finding positive results from industrial policy could be biased, while research finding negative results is ambiguous).

111 *See* Caroline Freund, Aaditya Mattoo, Alen Mulabdic & Michele Ruta, *Is US Trade Policy Reshaping Global Supply Chains?* 5 (World Bank Grp., Pol'y Rsch. Working Paper No. 10593, 2023), https://documents1.worldbank.org/curated/en/099812010312311610/pdf/IDU0938e50fe0608704ef70b7d005cda58b5af0d.pdf [https://perma.cc/7VYV-YAPY] ("Prima facie evidence on the reshuffing of the top [U.S.] trade partners from 2017 to 2022 [shows] . . . China's share fell 5.3 percentage points (ppts).").

112 *See* Aurelia Glass & Karla Walter, *How Biden's American-Style Industrial Policy Will Create Quality Jobs*, CTR. FOR AM. PROGRESS (Oct. 27, 2022), https://www.americanprogress.org/article/how-bidens-american-style-industrial-policy-will-create-quality-jobs [https://perma.cc/ED79-ES94] (predicting that the Acts would support millions of jobs in growing industries that produce items such as electric vehicles and semiconductors).

113 *See* Irwin, *supra* note 4; Niels Graham, *The IRA and CHIPS Act Are Supercharging US Manufacturing Construction*, ATL. COUNCIL (Feb. 13, 2024), https://www.atlanticcouncil.org/blogs/econographics/the-ira-and-chips-act-are-supercharging-us-manufacturing-construction [https://perma.cc/4H4L-SU9X] ("This surge in spending [on the computer, electronics, and electrical manufacturing sectors] has transformed the computer and electronic segment into the dominant driver of US manufacturing construction.").

114 *See Real Gross Domestic Product (GDPC1)*, FED. RSRV. BANK OF ST. LOUIS, https://fred.stlouisfed.org/series/GDPC1 [https://perma.cc/L6JB-BR38].

115 *See, e.g.*, *Advancing Artificial Intelligence Education for American Youth*, WHITE HOUSE

the focus was on clean energy and other technical sectors which are policy priorities for Democratic voters.[116] Moreover, Republicans have shown a greater willingness to impose broad-based discretionary tariffs, while Democrats have spent more government funding on subsidies. Economic theory has largely failed to discipline the choice of sectors or targets of tariffs. Instead, policymakers seem to be using a simple rule of thumb—they identify markets that appear to have high growth potential internationally, but which are missing or play a small role in the U.S. economy. These "missing markets" may have arisen due to traditional market failures, or simply due to historical globalization.[117] The potential for the "carrot" of domestic subsidies combined with the "stick" of international tariffs to fill market gaps in the long term depends on why these markets were missing in the first place and the effectiveness of policy in reallocating labor and capital to these new sectors.

Note that gaps in markets that are primarily domestic, with no relationship to exports, and which focus on the well-being of citizens, are not targeted by interventions bearing the label of "industrial policy." If the efficient use of labor depends heavily on the availability of childcare, for example, modern industrial policy may be doomed to failure without a shift in focus. Nevertheless, gaps in domestic markets meet the test of a "textbook case" for industrial policy, since there are higher external than internal returns to scale. For example, the first childcare provider to open a daycare in a desert may struggle to be profitable, since most families with children already have a stay-at-home parent. However, an aggregate shift in that market from desert to adequate supply may support enough children that the labor force can staff an additional hospital or factory. In order to see long-term success from attempts to implement modern American industrial policy, we argue that policymakers must focus on filling market gaps that destabilize workers.

(Apr. 23, 2025), https://www.whitehouse.gov/presidential-actions/2025/04/advancing-artificial-intelligence-education-for-american-youth [https://perma.cc/8LAR-UXQQ] (establishing a task force to promote AI competency); *Fact Sheet: President Donald J. Trump Declares National Emergency to Increase Our Competitive Edge, Protect Our Sovereignty, and Strengthen Our National and Economic Security*, *supra* note 4 ("These tariffs seek to address the injustices of global trade, reshore manufacturing, and drive economic growth for the American people.").

116 *See* Bivens, *supra* note 68 (describing the Inflation Reduction Act's progressive provisions on health, taxes, and climate change).

117 *See* Juhász, Lane & Rodrik, *supra* note 1; DAVID ERICKSON, FED. RSRV. BANK OF N.Y., THE MAKING MISSING MARKETS INITIATIVE 2, https://www.newyorkfed.org/medialibrary/media/outreach-and-education/household-financial-well-being/reports/2024/making-missing-markets [https://perma.cc/QUA2-ADSD] (finding that "a changing job market [that] leaves workers without the skills to take advantage of new jobs" can create a vicious cycle of bad economic outcomes, requiring the creation of a "missing market" to remedy); *supra* notes 86–95 and accompanying text (on globalization's impact on domestic labor).

II
CHILDCARE "DESERTS" AS A CASE STUDY

A. Childcare as Labor Infrastructure

Market gaps, such as those identified in the previous Section, must be filled in order for workers to be deployed to new sectors or new areas according to public need. For example, workers need to be healthy in order to perform their duties and be productive. In other words, they need "access to health care services for preventive care and for diagnosis and treatment of illnesses[.]"[118] This necessarily implies that they need health insurance coverage and availability of nearby healthcare facilities as key infrastructure to be able to work. Another example of critical labor infrastructure is childcare.[119] Childcare can affect workers' decisions of how to work, when to work, why to work, and where to work.[120] Workers are less likely to move to a new job if that implies switching from a trusted childcare provider to a new one.[121]

Targeted policies can help build up labor infrastructure, in order to increase labor supply and productivity. The current labor market conditions in the United States signal an economy that is working at full employment level.[122] The unemployment rate in January of 2025 stood at four percent,[123] which is below the estimated rate of natural unemployment of 4.4%.[124] This

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118 Winifred L. Boal, Jia Li & Sharon R. Silver, *Health Care Access Among Essential Critical Infrastructure Workers, 31 States, 2017–2018*, 137 PUB. HEALTH REPS. 301, 301 (2022).

119 *See generally* U.S. DEP'T OF LAB., CHILD CARE IS INFRASTRUCTURE (2024), https://www.dol.gov/sites/dolgov/files/WB/pdf/Child-care-Is-Infrastructure-issue-brief.pdf [https://perma.cc/BTW5-2LSN] (describing the link between childcare availability and labor force participation); *Child Care Is Infrastructure: Evidence from Universal Pre-K*, *supra* note 14 (summarizing the results of a study by the Council of Economic Advisers indicating that greater Pre-K childcare availability leads to increased private employment and business formation); Yvette Lind, *Childcare Infrastructure in the Nordic Countries as a Way of Enabling Female Labor Market Participation*, 74 NAT'L TAX J. 937, 948 (2021) (summarizing the legal provisions which provide for childcare as a form of infrastructure in the Nordic countries).

120 *See* Alicia Sasser Modestino, Jamie J. Ladge, Addie Swartz & Alisa Lincoln, *Childcare Is a Business Issue*, HARV. BUS. REV. (Apr. 29, 2021), https://hbr.org/2021/04/childcare-is-a-business-issue [https://perma.cc/G26W-2ZTF] (reporting results of a survey regarding how childcare availability impacted parents' decisions to reduce or leave work).

121 *Id.*

122 Full employment does not mean zero unemployment, as some workers will always experience frictional and structural unemployment. Frictional unemployment is caused by people switching jobs or entering the labor force. Structural unemployment is caused by changes in the structure of the economy, such as automation and artificial intelligence, that make some workers have obsolete skills and need retraining to be employable again. Job search and hiring, as well as retraining, take time; hence, neither frictional nor structural unemployment is ever going to be zero.

123 *See* BUREAU OF LAB. STAT., U.S. DEP'T OF LAB., THE EMPLOYMENT SITUATION—JANUARY 2025, at 1 (2025), https://www.bls.gov/news.release/archives/empsit_02072025.pdf [https://perma.cc/3JAC-3E54].

124 The estimated rate of natural unemployment is also referred to as the Non-Accelerating

suggests that the current workforce might not be able to fully supply the labor needed for the new jobs.[125]

The alternative seems to be an expansion of the labor force. Even though LFP has been steadily increasing in the United States after the COVID-19 shock, it is still well below some comparable Organization for Economic Cooperation and Development (OECD) economies. For example, the U.S. labor force participation rate was 3.4 percentage points lower than the United Kingdom's, 4.6 percentage points lower than Canada's, 5.2 percentage points lower than Germany's, and 5.6 percentage points lower than Australia's in the third quarter of 2024.[126] Disaggregating the labor force participation rates by sex shows slightly different patterns. While for both sexes the U.S. labor force participation rate is below those comparable OECD economies, the difference in male LFP ranges from 1.7 to 4.2 percentage points and the difference in female LFP ranges from 5.1 to 7.1 percentage points.[127] If we consider those OECD economies as a benchmark for the U.S. economy, there is more room to expand the labor force by incentivizing more women to join it.

Family policies have proven to be effective at increasing labor force participation, especially among women.[128] Among the effective policies are paid maternity leave and public childcare provision. Paid maternity leave entitlements, especially relatively short ones of less than thirty weeks, increase female labor force attachment.[129] The effects on female LFP seem to vary based on the specific characteristics of each entitlement such as

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Inflation Rate of Unemployment (NAIRU). *Natural Rate of Unemployment (Short-Term) (DISCONTINUED)*, FED. RSRV. BANK OF ST. LOUIS, https://fred.stlouisfed.org/series/NROUST [https://perma.cc/B46X-9TLB].

125 *See* Kevin S. Dubina, *Full Employment: An Assumption Within BLS Projections*, BUREAU LAB. STAT.: MONTHLY LAB. REV. (Nov. 2017), https://www.bls.gov/opub/mlr/2017/article/full-employment-an-assumption-within-bls-projections.htm [https://perma.cc/V7AQ-RLSB]; Tim Sablik, *Full Employment*, ECON FOCUS, Apr.–June 2013, at 10 https://www.richmondfed.org/~/media/richmondfedorg/publications/research/econ_focus/2013/q2/pdf/jargon_alert.pdf [https://perma.cc/6QQL-XT8R].

126 *See Labour Force Participation Rate*, OECD DATA EXPLORER, https://data-explorer.oecd.org [https://perma.cc/2WRQ-WWPW] (search "Labour Force Participation Rate"; then select the dataset of that name; then select "Male" and "Female" in addition to "Total" under "Sex"; then select "Table" view).

127 *Id.*

128 *See* U.S. DEP'T OF LAB., *supra* note 119 (reporting that a $24 billion investment via American Rescue Plan Child Care Stabilization Funds resulted in an additional 325,000 mothers remaining in the labor force); Joya Misra, Michelle Budig & Irene Böckmann, *Work-Family Policies and the Effects of Children on Women's Employment and Earnings* 13–16 (Luxembourg Income Study Working Paper Series, Paper No. 543, 2010), https://www.econstor.eu/bitstream/10419/95505/1/638278171.pdf [https://perma.cc/5AW3-73MG] (finding that employment penalties for having children were reduced in countries with longer maternity leave and greater availability of childcare).

129 *See* Elena Del Rey, Andreas Kyriacou & José I. Silva, *Maternity Leave and Female Labor Force Participation: Evidence from 159 Countries*, 34 J. POPULATION ECON. 803, 803 (2021).

length and income replacement rate.[130] Some research has estimated that the relationship between leave length and female LFP is inverted U-shaped with a maximum around thirty weeks.[131] The effects on mothers' labor market outcomes are usually larger than the effects on the overall female population. Studies from different countries have found large positive effects on usual weekly work hours,[132] as well as employment[133] and LFP of up to five percentage points.[134]

Public childcare provision has mostly focused on early childhood education (ECE), which includes kindergarten and pre-kindergarten (pre-K). Perhaps this is due to its dual purpose of providing instruction and childcare.[135] Since the second half of the last century, many governments have implemented some form of subsidy for ECE,[136] from first offering kindergarten for five-year-old children, then offering pre-K for four-year-old children and in some cases also including three-year-old children in those pre-K programs. These programs have often been primarily evaluated by their instruction purpose and less attention has been placed on their childcare provision purpose.[137] Nevertheless, research has shown that public provision of ECE is one of the most effective policies to promote female employment.[138] For example, research studying the expansion of public

130 *See* Luis Faundez, *The Effects of Paid Maternity Leave on Female Poverty: Evidence from Chile*, *in* POVERTY - ASSOCIATED RISKS AND ALLEVIATION 1, 7 (Andrzej Klimczuk & Delali A. Dovie eds., 2025), https://www.intechopen.com/online-first/1211827 [https://perma.cc/A7DJ-Q2DC] (summarizing research findings on maternity leave and labor force participation).

131 *See* Del Rey, Kyriacou & Silva, *supra* note 129, at 803.

132 *See* Maya Rossin-Slater, Christopher J. Ruhm & Jane Waldfogel, *The Effects of California's Paid Family Leave Program on Mothers' Leave-Taking and Subsequent Labor Market Outcomes*, 32 J. POL'Y ANALYSIS & MGMT. 224, 241 (2013) (finding a 6–10% increase in hours worked among mothers benefitting from expanded paid family leave).

133 *See* Annette Bergemann & Regina T. Riphahn, *Maternal Employment Effects of Paid Parental Leave*, 36 J. POPULATION ECON. 139, 154 (2023); Simon Burgess, Paul Gregg, Carol Propper & Elizabeth Washbrook, *Maternity Rights and Mothers' Return to Work*, 15 LAB. ECON. 168, 184–88 (2008) (finding, in the United Kingdom, that mothers with legally protected rights to return to work at pre-pregnancy income levels returned earlier than comparable mothers without such rights); Faundez, *supra* note 130, at 12–13.

134 *See* Faundez, *supra* note 130, at 12–13.

135 *See* Elizabeth U. Cascio, *Early Childhood Education in the United States: What, When, Where, Who, How, and Why* 1–2 (Nat'l Bureau of Econ. Rsch., Working Paper No. 28722, 2021), https://www.nber.org/papers/w28722 [https://perma.cc/8TXU-E4FJ] (discussing the group instructional opportunities of ECE).

136 *See* Elizabeth U. Cascio, *Maternal Labor Supply and the Introduction of Kindergartens into American Public Schools*, 44 J. HUM. RES. 140, 141 (2009) (discussing the expansion of pre-kindergarten programs in the United States); Tarjei Havnes & Magne Mogstad, *Money for Nothing? Universal Child Care and Maternal Employment*, 95 J. PUB. ECON. 1455, 1455 (2011) (discussing the Kindergarten Act, an expansion of state-subsidized childcare in Norway).

137 *See* Cascio, *supra* note 135, at 2 (summarizing the state of the literature as addressing development and future outcomes of children).

138 *See* Misra, Budig & Böckmann, *supra* note 128, at 13–16 (using data on employed women aged 25–45 from 21 countries across Europe, North America, Israel, and Australia, and finding that

kindergarten provision in the United States during the second half of the twentieth century has found substantial positive effects on maternal labor supply;[139] however, those positive effects seem to have been driven mostly by single mothers without additional young children.[140]

More recent evidence comes from the implementation and expansion of Head Start, universal pre-kindergarten (UPK) programs in different cities and states in the United States, and similar programs in other countries. The evidence of whether Head Start improves parental labor market outcomes is inconclusive. While there seems to be no meaningful overall effect on parental employment, some groups, such as single mothers and mothers who enrolled their children at age three, seem to have benefited from the program. These groups saw increases in their short-run earnings and improved access to full-time employment.[141] The evidence regarding UPK in the United States is a bit more encouraging. UPK is usually found to improve parental labor market outcomes such as higher employment rates among mothers,[142] persistent increases in parental earnings, and reduction in career gaps.[143]

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work-facilitating policies, such as childcare for young children, have positive effects on mothers' employment hours and wages).

139 *See* Jonah B. Gelbach, *Public Schooling for Young Children and Maternal Labor Supply*, 92 AM. ECON. REV. 307, 307–08 (2002) (using data from the 1980 U.S. Census, and finding that public school enrollment in kindergarten increased maternal labor supply by between 6 and 24 percent).

140 *See* Cascio, *supra* note 136, at 151–57 (using data from five U.S. Censuses (1950–1990), and finding that 7.5% of single mothers with no younger children entered the work force due to public kindergarten enrollment of a five-year-old child); Maria Donovan Fitzpatrick, *Revising Our Thinking About the Relationship Between Maternal Labor Supply and Preschool*, 47 J. HUM. RES. 583, 591–94 (2012) (using data from the 2000 U.S. Census and finding a statistically significant relationship between public school enrollment and employment only for single mothers without additional young children).

141 *Compare* Terri J. Sabol & P. Lindsay Chase-Lansdale, *The Influence of Low-Income Children's Participation in Head Start on Their Parents' Education and Employment*, 34 J. POL'Y ANALYSIS & MGMT. 136, 155–56 (2015) (finding no evidence that enrollment in Head Start improves parental employment outcomes), *with* Cuiping Schiman, *Experimental Evidence of the Effect of Head Start on Mothers' Labor Supply and Human Capital Investments*, 20 REV. ECON. HOUSEHOLD 199, 215 (2022) (finding an increase in full-time employment among mothers of three-year-old children in Head Start and a corresponding decrease in part-time employment), *and* Jocelyn Wikle & Riley Wilson, *Access to Head Start and Maternal Labor Supply: Experimental and Quasi-Experimental Evidence*, 41 J. LAB. ECON. 1081, 1083–84 (2023) (finding increased employment and higher earnings among single mothers).

142 *See* U.S. DEP'T OF LAB., *supra* note 119, at 1 (claiming that states and cities that introduced universal pre-K experienced higher employment rates among mothers of young children compared to places that did not).

143 *See* John Eric Humphries, Christopher Neilson, Xiaoyang Ye & Seth D. Zimmerman, *Parents' Earnings and the Returns to Universal Pre-Kindergarten* 2–3 (Nat'l Bureau of Econ. Rsch., Working Paper No. 33038, 2024), https://www.nber.org/system/files/working_papers/w33038/w33038.pdf [https://perma.cc/M7GH-TSRU] (using a randomized lottery to determine enrollment in an extended-day UPK program in New Haven, Connecticut, and finding that UPK enrollment increases parent earnings by 21.7% during pre-kindergarten, with gains persisting for at least six years after pre-kindergarten, and that

Additionally, places that have implemented UPK have seen larger labor force growth and greater increases in business applications compared to places that did not.[144] On the other hand, evidence from Norway suggests that subsidizing childcare for children ages three to six has little, if any, causal effect on maternal employment.[145] However, it is important to keep in mind that Norway has a high female LFP, almost eight percentage points higher than the United States in the third quarter of 2024,[146] and higher LFP rates could mean that the subset of women for whom an ECE subsidy could have a potential effect on their employment decisions is smaller than it is in the United States.

Even if the effects of ECE programs such as UPK, Head Start, or preschool in general on child development are small[147] or null,[148] short-term cost-benefit analysis of ECE programs such as UPK suggests that the greatest benefits from these programs are derived from the increased parental employment.[149] Those benefits by themselves outweigh the programs' costs, increasing overall social welfare. It has been estimated that each dollar of public spending on UPK yields approximately ten dollars in benefits.[150]

Little attention from both policymakers and researchers has been placed on childcare for infants and toddlers. However, what little evidence exists points to positive effects on adults' labor market outcomes. For example, the ABC/CARE program in the United States led to a substantial increase in

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the gains "appear to arise from a combination of modestly increased labor supply and reduced career disruption while the child is in pre-kindergarten").

144 *See* U.S. DEP'T OF LAB., *supra* note 119, at 1.

145 Havnes & Mogstad, *supra* note 136, at 1461–62 (using data from Norway and finding a small causal effect of subsidized childcare on maternal employment). The authors conclude that "[i]nstead of increasing mothers' labor supply, the new subsidized child care mostly crowds out informal care arrangements." *Id.* at 1456.

146 *Labour Force Participation Rate*, *supra* note 126.

147 *See* Humphries, Neilson, Ye & Zimmerman, *supra* note 143, at 19–20 (finding no significant positive impact of UPK on children's educational outcomes in grades 3–8); MICHAEL PUMA ET AL., U.S. DEP'T OF HEALTH & HUM. SERVS., HEAD START IMPACT STUDY: FINAL REPORT xvi–xvii (2010), https://eric.ed.gov/?id=ED507845 [https://perma.cc/N6VX-JMRX] (finding only a few small statistically significant effects of Head Start enrollment on various cognitive and social-emotional outcomes by the end of first grade).

148 *See* Luis Faundez & Robert Kaestner, *Estimating a Theoretically Consistent Human Capital Production Function with an Application to Head Start*, 49 EVALUATION REV. 61, 63 (2025) (finding no statistically significant impacts of Head Start on child or adult outcomes); Elizabeth U. Cascio & Diane Whitmore Schanzenbach, *The Impacts of Expanding Access to High-Quality Preschool Education*, BROOKINGS PAPERS ON ECON. ACTIVITY, Fall 2013, at 167 (finding that, at the fourth grade level, prior public preschool enrollment had no statistically significant impact on test scores).

149 Humphries, Neilson, Ye & Zimmerman, *supra* note 143, at 29 (finding that UPK potentially offers greater returns to parents than unemployment insurance, cash transfers, and the Earned Income Tax Credit).

150 *Id.* at 4.

maternal labor force participation and parental labor income.[151] While the Infant Health and Development Program (IHDP) carried out in the United States during the late 1980s did not increase the overall maternal labor supply, less-educated mothers increased their labor supply due to the childcare provided by the program.[152] Evidence from publicly provided childcare for children ages zero to three in Brazil shows that even though childcare did not increase parental labor supply, it allowed other adults who were part of the household, such as grandparents and adolescent siblings, who were likely previously taking care of the children, to increase their labor supply.[153]

Similarly, policies intended to make childcare more affordable, such as childcare subsidies and childcare tax credits, have proven to be effective at improving maternal labor market outcomes. Researchers have found that childcare subsidies increase maternal labor supply, particularly among single mothers who face higher childcare costs.[154] Research also suggests that childcare tax credits are more effective than childcare subsidies at increasing labor supply.[155]

B. Creating a Comprehensive Dataset

We created a dataset containing all licensed childcare facilities in the state of California using data from two different sources. First, we gathered data from the California Department of Social Services (CDSS) by downloading from its website spreadsheets, including childcare centers and family daycare data.[156] Unfortunately, CDSS only makes available family

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151 *See* Jorge Luis García, James J. Heckman, Duncan Ermini Leaf & María José Prados, *Quantifying the Life-Cycle Benefits of an Influential Early-Childhood Program*, 128 J. POL. ECON. 2502, 2523 (2020) (summarizing the results of a synthetic matched control study evaluating the impact of ABC/CARE on maternal labor force participation and income).

152 *See* Juan Chaparro, Aaron Sojourner & Matthew J. Wiswall, *Early Childhood Care and Cognitive Development* 6 (Nat'l Bureau of Econ. Rsch., Working Paper No. 26813, 2020), http://www.nber.org/papers/w26813.pdf [https://perma.cc/54ZA-WQ73].

153 *See* Orazio Attanasio, Ricardo Paes de Barros, Pedro Carneiro, David K. Evans, Lycia Lima, Pedro Olinto & Norbert Schady, *Public Childcare, Labor Market Outcomes of Caregivers, and Child Development: Experimental Evidence from Brazil* 3 (Nat'l Bureau of Econ. Rsch., Working Paper No. 30653, 2024), http://www.nber.org/papers/w30653 [https://perma.cc/5ZEZ-YE6J] (finding the largest labor supply impacts on cohabiting grandparents and older siblings).

154 *See* Chris M. Herbst, *The Labor Supply Effects of Child Care Costs and Wages in the Presence of Subsidies and the Earned Income Tax Credit*, 8 REV. ECON. HOUSEHOLD 199, 199 (2010); *see also* Susan L. Averett, H. Elizabeth Peters & Donald M. Waldman, *Tax Credits, Labor Supply, and Child Care*, 79 REV. ECON. & STAT. 125 (1997) (finding that an increase in child care subsidies increases women's labor supply).

155 *See* Xiaodong Gong & Robert Breunig, *Childcare Assistance: Are Subsidies or Tax Credits Better?*, 38 FISCAL STUD. 7, 45 (2017) (finding that tax credits have larger effects in increasing the labor supply of mothers than child care subsidies, but are less redistributive).

156 *Care Facility Search*, CAL. DEP'T OF SOC. SERVS., https://www.ccld.dss.ca.gov/carefacilitysearch/DownloadData (last visited Sept. 8, 2025).

daycare data for facilities with a capacity greater than eight children. To obtain data for facilities with a capacity of eight or fewer children, namely small family daycare facilities, we scraped data from the Upwards website.[157] From this website, we obtained license number, facility name, and approximate location. Then, we used those license numbers to scrape from the CDSS website additional information for each facility, such as licensee name, facility administrator, license date, and capacity, among others. Additionally, we scraped from Upwards the approximate location of the large family daycare facilities obtained from CDSS as, due to privacy issues, CDSS does not disclose the location of family daycare facilities.

We cleaned and standardized facility addresses and then grouped facilities at the city level to determine the total number of childcare facilities and their total capacity for each city. Next, we merged this dataset with American Community Survey (ACS) data,[158] including different demographic characteristics such as racial composition, number of children under five years old, labor market outcomes, and income. ACS data are available at several geographic levels, but not at the city level; hence, to get city level metrics, we aggregated five-digit ZIP code level data at the city level using a crosswalk from the United States Department of Housing and Urban Development (HUD) and the United States Postal Service (USPS).[159] We augmented this dataset by adding real estate data at the city level from ATTOM.[160] These additional data include number of parcels, their size and assessed value, and their type (residential, commercial, industrial, etc.).

Using the licensing date and closure date of each facility provided by CDSS, we were able to construct a panel dataset of childcare facilities and capacity availability at the city level spanning from 2018 to 2023. However, due to ACS and ATTOM data availability, we limited the panel dataset to the period 2018–2022. In each year, we calculated a measure of childcare coverage for each city by dividing the total childcare capacity by the number of children under the age of five.

Based on this capacity ratio, we categorized each city as either a childcare desert, an underserved city, or an adequately served city. A childcare desert city is a city that has no licensed childcare provider available, that is to say, the capacity ratio is equal to zero. An underserved

157 UPWARDS, https://upwards.com (last visited Sept. 8, 2025). At the time of analysis, Upwards was known as Weecare.

158 U.S. CENSUS BUREAU, 2018–2022 AMERICAN COMMUNITY SURVEY 5-YEAR ESTIMATES, https://data.census.gov (last visited Sept. 8, 2025).

159 *HUD USPS ZIP Code Crosswalk Files*, OFF. OF POL'Y DEV. & RSCH., U.S. DEP'T OF HOUS. & URB. DEV., https://www.huduser.gov/portal/datasets/usps_crosswalk.html (last visited Sept. 8, 2025).

160 Due to a Data Use Agreement, these data will not be made available for replication purposes. The data can be obtained from the vendor at ATTOM, https://www.attomdata.com (last visited Sept. 8, 2025).

city is a city that has licensed childcare available, although it is not enough to cover at least half of its children under the age of five. In this case, the capacity ratio is greater than zero but less than 0.5. Finally, an adequately served city is one that has enough licensed childcare capacity to enroll half or more of its children under five years old (capacity ratio equal to or greater than 0.5). We acknowledge that we are underestimating childcare availability as our approach leaves out other forms of informal childcare arrangements such as babysitter, friend, neighbor, and relative care, and other forms of license-exempt care. Some researchers have estimated that up to eighty percent of children aged two and younger and forty percent of children aged five and younger are cared for by informal caregivers in California.[161] However, it is common practice to exclude this type of childcare and focus exclusively on licensed childcare.[162] Below, we report our findings regarding licensed childcare coverage in California.

C. Empirical Analysis

1. Childcare Deserts and Underserved Cities

Overall, 32.1% of cities in California have no licensed childcare available within their boundaries. A striking 37.6% of cities are categorized as underserved and only 30.3% of cities have enough licensed childcare capacity to enroll at least half of their children under five. These figures, however, differ significantly based on population density levels. Highly dense urban areas are more likely to be adequately served than rural areas. Figure 1 depicts the fraction of cities categorized as a childcare desert between 2018 and 2022 by population density level. While only approximately 6% of urban and mostly urban cities had no licensed childcare available, a striking 63% of rural localities were in the same situation in 2018. Even though there has been some improvement in rural areas, by 2022 58% of these localities still had no licensed childcare available. A similar trend appears in "mostly rural" localities—places where at least half of the population live in rural areas. While approximately 20% of these places had no licensed childcare in 2018, by 2022 this fraction had declined to 16%.

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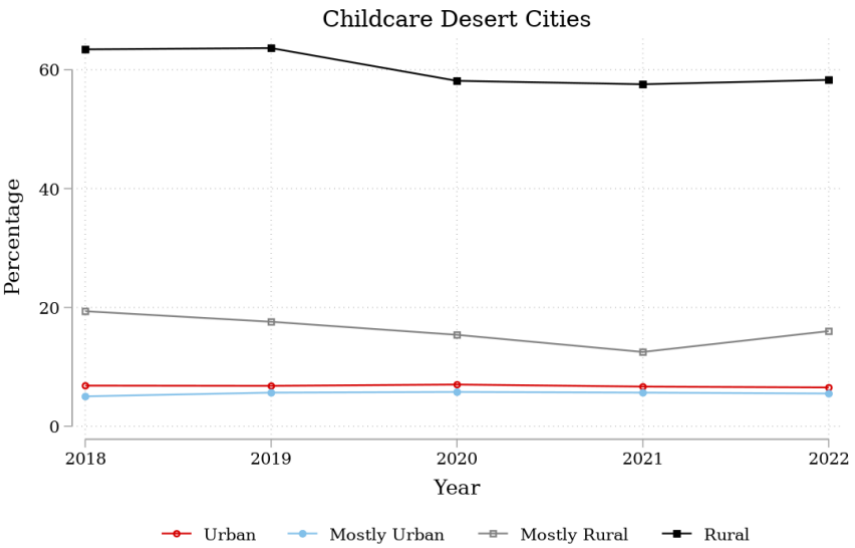
161 *See* DAVID & LUCILE PACKARD FOUND., INFORMAL CHILD CARE IN CALIFORNIA: CURRENT ARRANGEMENTS AND FUTURE NEEDS 2 (2015), [https://perma.cc/Z4F9-WGVN].

162 *E.g.*, MALIK ET AL., *supra* note 60, at 6.

FIGURE 1: PERCENTAGE OF CHILDCARE DESERT CITIES BY POPULATION DENSITY LEVEL



Whereas childcare deserts are mostly concentrated in rural localities, underserved areas are concentrated in urban localities. These differences by population density are as striking as those discussed earlier about desert areas. Figure 2 shows that the fraction of underserved rural localities has remained relatively constant since 2018 at around 22%. However, there has been an increase in the proportion of mostly rural localities that do not have enough licensed childcare to enroll at least half of their children under five. This proportion went up from 0.53 in 2018 to 0.6 in 2022. On the other hand, urban and mostly urban localities have seen a steady reduction in the fraction of underserved areas since 2018. Nevertheless, nearly half of urban cities and 55% of mostly urban localities do not have adequate licensed childcare provision.

FIGURE 2: PERCENTAGE OF UNDERSERVED CITIES BY POPULATION DENSITY LEVEL

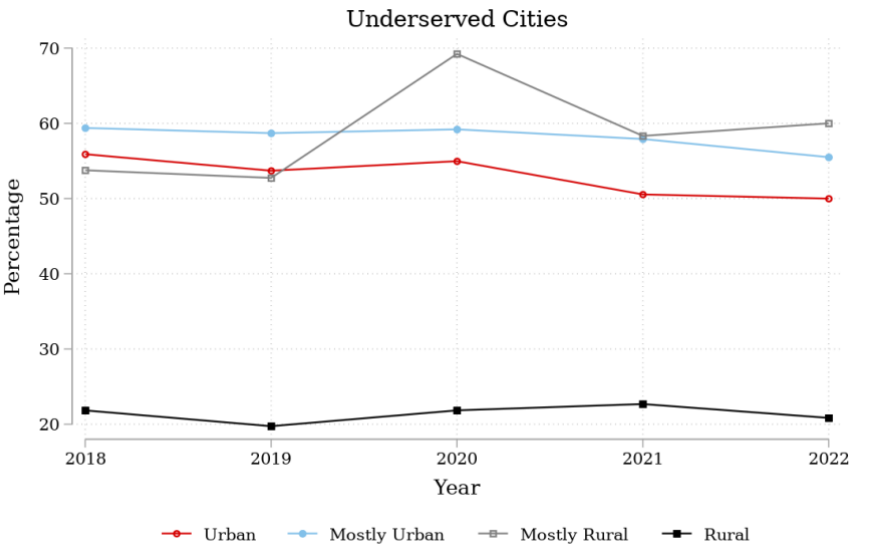
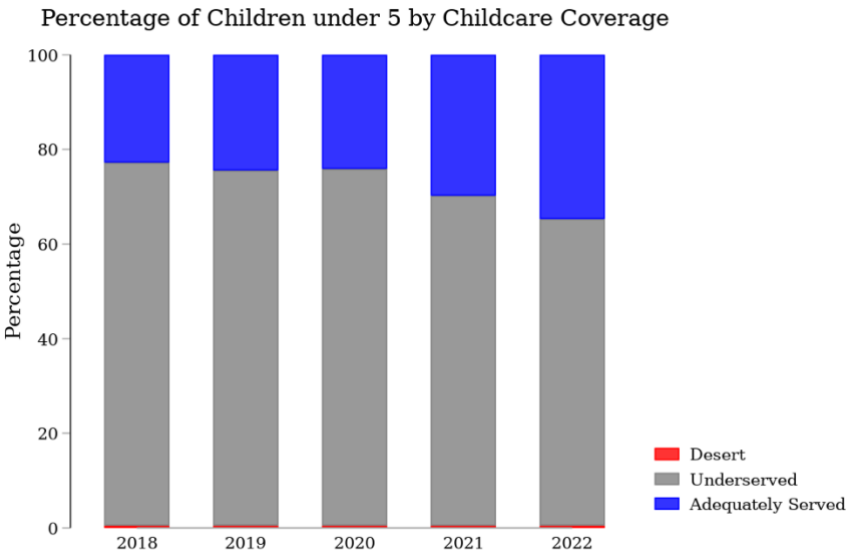


Figure 3 translates the findings of Figures 1 and 2 into a proportional breakdown of California children under five—that is, Figure 3 demonstrates that a majority of California children under five live in areas that lack adequate licensed childcare coverage. Even though licensed childcare coverage improved during the period we covered in our study, a striking 65% of children lived in underserved areas in 2022, down from 77% in 2018. The share of children under five years old living in childcare deserts has remained stable since 2018 at around 0.5%.

FIGURE 3: PERCENTAGE OF CALIFORNIA CHILDREN UNDER 5 BY LICENSED CHILDCARE COVERAGE



Differences in licensed childcare provision are not only marked by the urban-rural division but also by geographic location. Figure 4 features a map of California depicting the different levels of licensed childcare provision by city. The map shows that childcare deserts concentrate in Northern California and the desert area of Southern California. Underserved areas are mostly located in the Central Valley area and adequately served areas are mostly located in the larger coastal metropolitan areas. Places like the San Francisco Bay Area, Metro Los Angeles, San Diego, and Sacramento are the most likely to have adequate licensed childcare provision. However, even within these metropolitan areas there is significant variation in the level of licensed childcare coverage across the different cities that are part of them. Figure 5 presents a closer look at the licensed childcare coverage in the San Francisco Bay Area. While most of the Bay Area has adequate licensed childcare coverage, there are a few localities, mostly located farther away from the main urban centers, that have no licensed childcare available. Even among the populous core cities, licensed childcare levels differ. While San Francisco and San Jose exhibit adequate licensed childcare coverage, Oakland is not able to provide enough licensed childcare to enroll at least half of its children under five. In the case of the metropolitan Los Angeles area, depicted in Figure 6, adequate licensed childcare provision is concentrated near the coastal areas. Most of the metropolitan area is categorized as underserved with a few childcare desert spots.

FIGURE 4: LICENSED CHILDCARE COVERAGE IN THE STATE OF CALIFORNIA

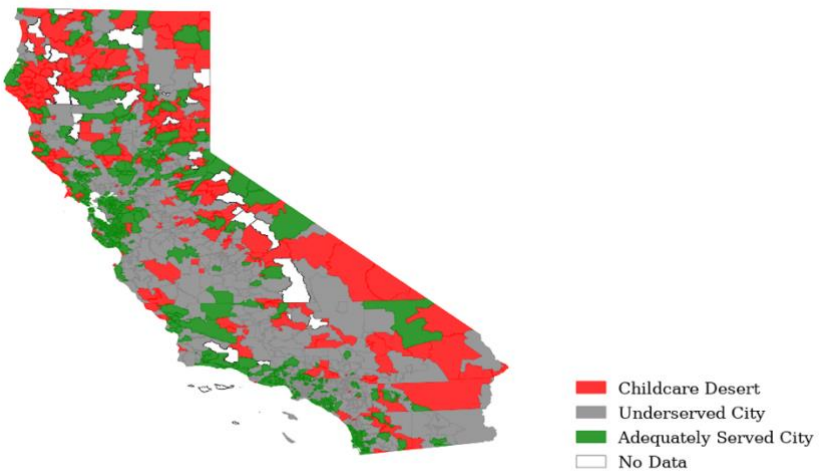


FIGURE 5: LICENSED CHILDCARE COVERAGE IN THE SAN FRANCISCO BAY AREA

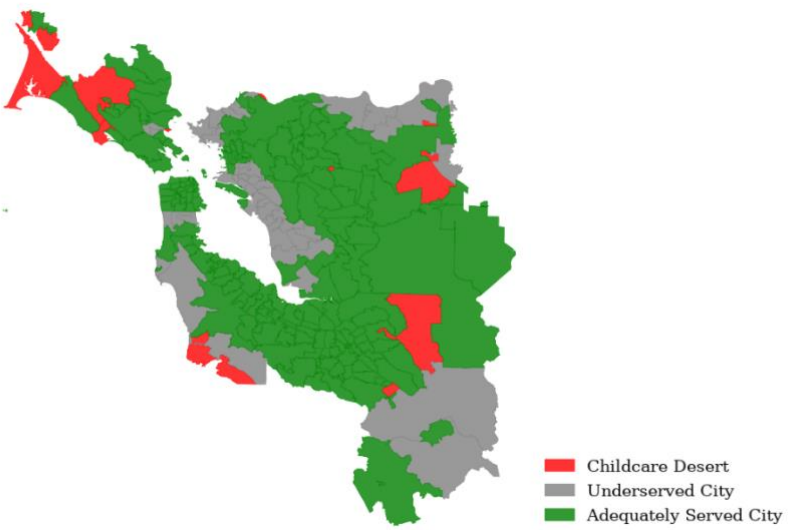
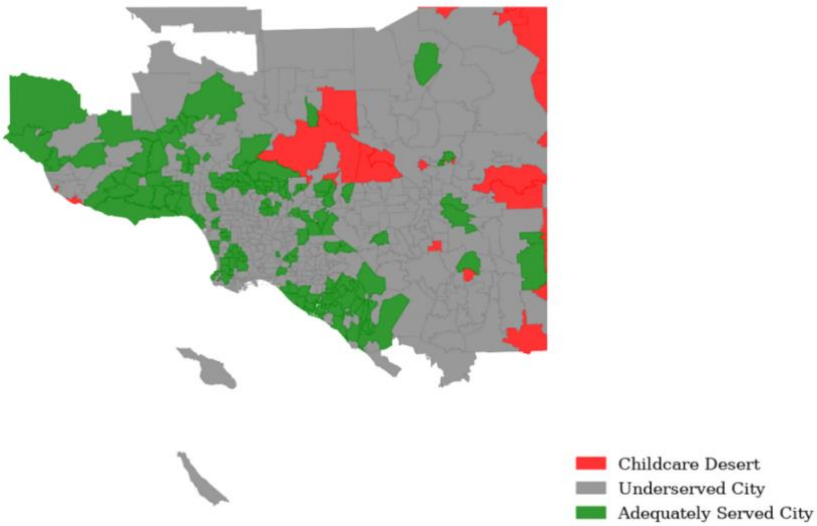


FIGURE 6: LICENSED CHILDCARE COVERAGE IN THE METROPOLITAN LOS ANGELES AREA



2. Demographic Characteristics and Childcare Coverage

The geographical differences in licensed childcare provision (discussed above) are accompanied by differences in key demographic characteristics. For example, the racial and ethnic composition of cities differs significantly based on the level of licensed childcare available. Figure 7 shows that childcare deserts are more likely to be white than are places that offer licensed childcare. This is likely due to the fact that childcare deserts are mostly located in rural areas. In places that provide licensed childcare, non-white residents occupy a greater share of underserved areas than they do adequately served areas. Underserved areas have larger shares of Black and mixed race populations, and non-white residents account for over 40% of the total population in underserved areas. Similarly, places with deficient licensed childcare provision are more likely to be Hispanic than places with adequate licensed childcare coverage, as shown in Figure 8. This difference is large, exceeding sixteen percentage points in 2022. In desert areas, less than 20% of the population is of Hispanic origin.

FIGURE 7: CITY-LEVEL RACIAL COMPOSITION BY LEVEL OF LICENSED CHILDCARE COVERAGE

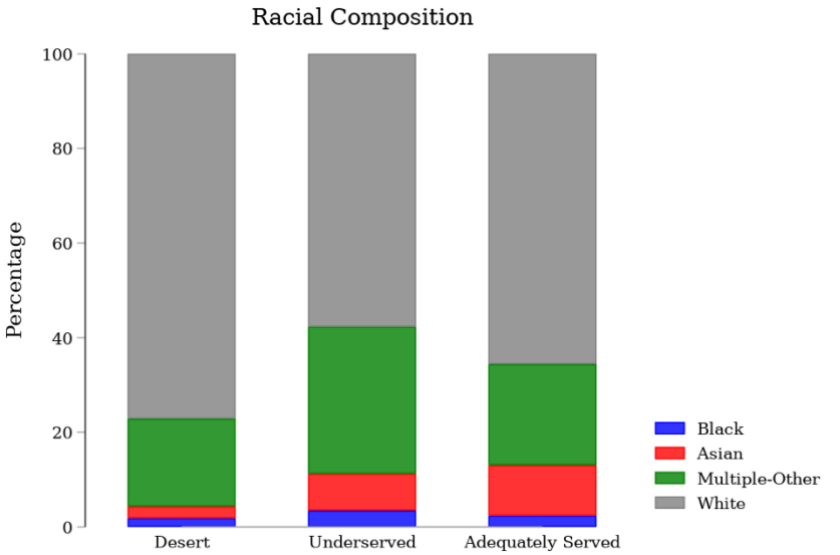
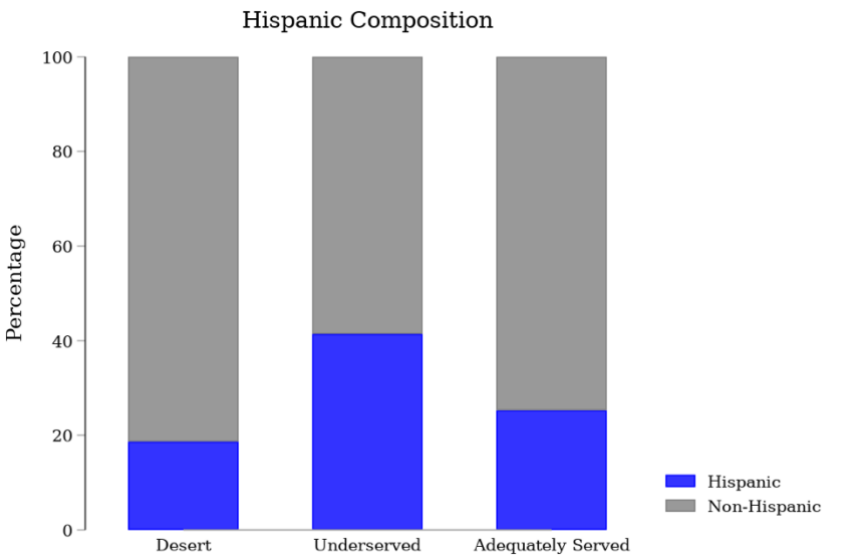


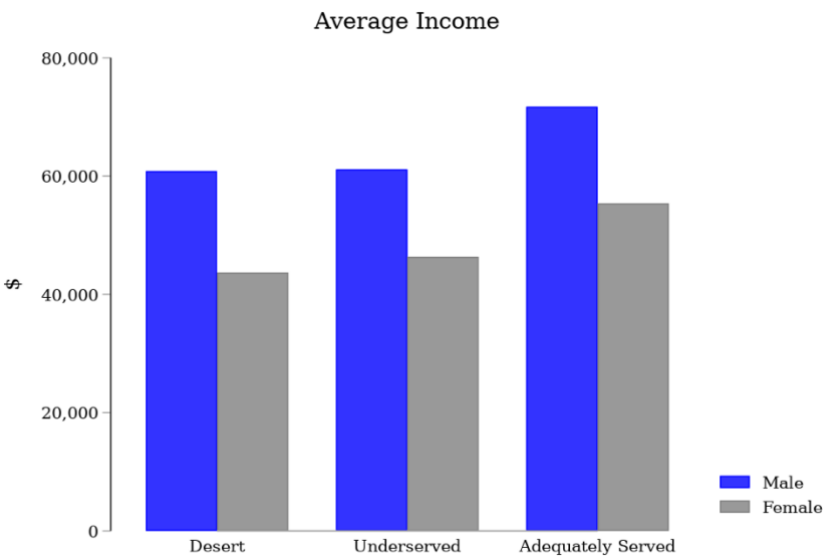
FIGURE 8: CITY-LEVEL ETHNIC COMPOSITION BY LEVEL OF LICENSED CHILDCARE COVERAGE



As expected, given the significant differences in geographical location and racial/ethnic composition of cities according to their level of licensed childcare coverage, the average city-level income differs with the level of

licensed childcare coverage. Figure 9 shows that average income for both men and women is higher in places that have adequate licensed childcare provision. Average male income is almost 18% higher in adequately served cities than in childcare desert areas (~ $10,900 higher) and 17% higher than in underserved areas (~ $10,600 higher). Average female income is approximately 27% higher in adequately served areas than in desert areas (~ $11,700 higher) and 19% higher than in underserved areas (~ $9,000 higher). Surprisingly, the differences in average income between childcare deserts and underserved areas are minimal. Average male income is only 0.5% higher in underserved areas than in desert areas (~ $290 higher) and average female income is approximately 6% higher in underserved areas than in childcare deserts (~ $2,700 higher).

FIGURE 9: CITY-LEVEL FEMALE AND MALE AVERAGE INCOME BY LEVEL OF LICENSED CHILDCARE COVERAGE



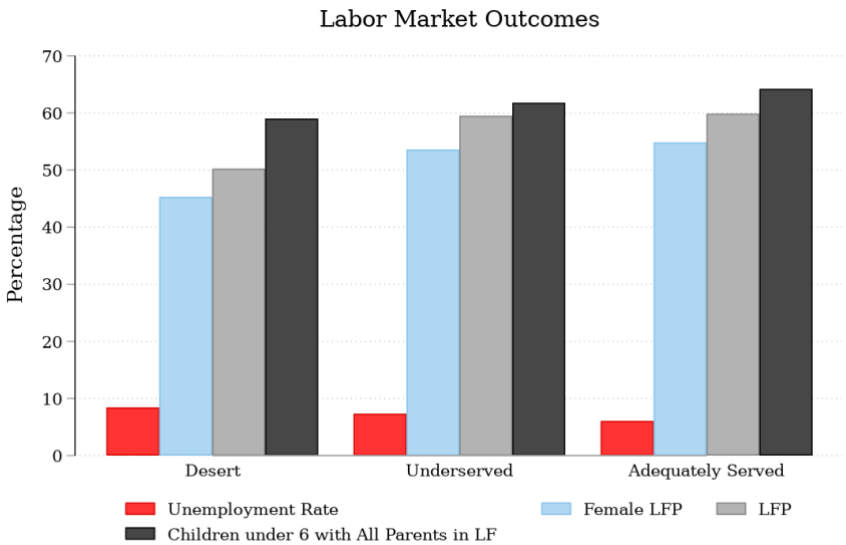
3. *Labor Market Outcomes and Childcare Coverage*

Other very important city-level differences by licensed childcare provision level are observed in terms of labor market outcomes. We focus on total LFP, female labor force participation rate, unemployment rate, and the share of children under six that have all parents participating in the labor force. The labor force participation rate represents the proportion of the total population aged sixteen years old and over that is in the labor force. The labor force (LF) includes all people aged sixteen and older who are working or actively looking for work. The unemployment rate is defined as the

percentage of people in the labor force who are not working but are actively searching for work. Finally, the share of children under six that have all parents participating in the labor force is constructed as the proportion of all children under six in a city whose parents, or parent in case they live with only one parent, are working or actively looking for a job.

Figure 10 displays selected labor market outcomes by level of licensed childcare provision. The graph shows that the greater the licensed childcare coverage, the better the labor market outcomes. For example, the total labor force participation rate is almost ten percentage points higher in cities with adequate licensed childcare provision than in childcare desert areas. Similarly, female labor force participation rate is over nine percentage points higher in adequately served cities than in childcare deserts. Both LFP and female LFP are also significantly higher in underserved areas than in childcare deserts. And while the differences in those rates between underserved and adequately served areas are small, they are still economically significant (up to 1.3 percentage points difference). Regarding the unemployment rate, it steadily decreases as the licensed childcare provision increases. The unemployment rate is 8.4% in childcare desert areas, 7.3% in underserved areas, and 6.1% in adequately served cities. Conversely, the share of children under six years old with all parents in the labor force steadily increases as the licensed childcare coverage increases. While only 59% of all children under six in desert areas have all their parents participating in the labor force, that percentage increases to almost 62% and over 64% in underserved and adequately served areas, respectively.

FIGURE 10: SELECTED CITY-LEVEL LABOR MARKET OUTCOMES BY LEVEL OF LICENSED CHILDCARE COVERAGE



4. Regression Analysis

Overall, the previous figures show a strong association of licensed childcare provision and labor market outcomes, suggesting that more childcare provision could allow more people to participate in the labor market, especially women and parents, and more people could be able to find work.[163] Given the importance of labor availability for industrial policy, we study whether these associations remain after accounting for different factors that could confound or bias the associations. To do so, we estimate the conditional association between each of the labor market outcomes shown in Figure 10 and different metrics of licensed childcare availability using linear regressions. A linear regression is a statistical technique that estimates the linear relationship between a possibly dependent variable and an independent variable or a set of independent variables. In the case of having two or more independent variables, or covariates, the regression provides an estimate of the linear relationship between the outcome and each covariate after partialing out the variation of the outcome associated to all other covariates. The sign of the estimated coefficients indicates whether the

163 We cannot rule out that the direction of causality is the opposite. It could be possible that childcare providers choose to locate in places that have higher levels of employment as parents are both more likely to need childcare and have a higher willingness to pay for it, making it more attractive to operate a childcare center. In such case, it would be the level of employment that causes the level of childcare coverage.

correlation is positive (i.e., direct) or negative (i.e., inverse). For each coefficient, a statistical test is performed to determine the likelihood that the observed relationship (or an even stronger relationship) would be generated if the null hypothesis were correct and the true correlation between the variable and the outcome was zero. A probability value or *p*-value describes such likelihood. The smaller the *p*-value, the more the data support rejecting the null hypothesis in favor of the alternative hypothesis that the correlation between the variable and the outcome is different from zero. In other words, *p*-values are used to assess the statistical significance of the coefficients, and a coefficient is generally considered to be statistically significant if the *p*-value is smaller than 0.05.

We use three different measures of licensed childcare availability. First, we use the ratio of all licensed childcare capacity in a city over the total number of children under five living in the city. Regressions using this metric will estimate how a labor market outcome changes when a city is able to provide licensed childcare to all its children under five. Second, we create an indicator variable that categorizes cities as either underserved[164] or adequately served. By using this variable, we estimate how a labor market outcome changes when licensed childcare is provided to at least half of the children under five in a city. Third, we create an indicator variable that divides cities into those with no licensed childcare available—childcare deserts—and those with some licensed childcare available. Regressions using this variable estimate how a labor market outcome changes when there is some licensed childcare available.

All associations between labor market outcomes and licensed childcare availability will be conditional on some key city-level demographic characteristics. The demographic characteristics we control for in the regressions include the racial and ethnic composition of each city, the percentage of the population who is under five years old, the poverty rate, homeownership rate, percentage of people self-employed, percentage of people working from home, average income by sex, and the percentage of rural population. Additionally, we control for city-level real estate characteristics that could be associated with both the level of licensed childcare provision and labor market outcomes. These covariates include the total number of parcels in a city, total residential and commercial parcels, total residential and commercial square feet available, and the average value per square foot of commercial and residential properties.

Table 1 displays the results of the regression analyses. Panel A shows the results for the unemployment rate, Panel B exhibits the results for the female labor force participation rate, Panel C displays the results for the labor

164 Recall that an underserved city is unable to provide licensed childcare to at least half of its children under five.

force participation rate, and Panel D reports the results for the share of children under six with all parents in the labor force. Regressions in Model 1 use the capacity ratio as the licensed childcare provision measure, Model 2 uses an indicator for underserved cities, and Model 3 uses an indicator for childcare deserts.

TABLE 1. ASSOCIATION BETWEEN LABOR MARKET OUTCOMES AND LICENSED CHILDCARE COVERAGE

	Model 1	Model 2	Model 3
Unemployment Rate			
Capacity/Children	-0.000674		
	(0.000522)		
Underserved		-0.000820	
		(0.00205)	
Desert			0.00675*
			(0.00281)
N	5002	5588	5588
Female Labor Force Participation Rate			
Capacity/Children	0.00350**		
	(0.00113)		
Underserved		-0.00827*	
		(0.00346)	
Desert			-0.0192**
			(0.00588)
N	5002	5588	5588
Labor Force Participation Rate			
Capacity/Children	0.00423***		
	(0.00115)		
Underserved		-0.0109***	
		(0.00308)	
Desert			-0.0236***
			(0.00497)
N	5002	5588	5588
Share Children Under Six with All Parents in Labor Force			
Capacity/Children	0.00639		
	(0.00452)		
Underserved		-0.0380***	
		(0.0078)	
Desert			-0.0256
			(0.0141)
N	4982	5036	5036

Robust standard errors in parentheses. All regressions control for racial and ethnic composition, percentage of population younger than five years old, poverty rate, homeownership rate, percentage of people self-employed, percentage of people working from home, average income by sex, the percentage of rural population, total number of parcels in a city, total residential and commercial parcels, total residential and commercial square

feet available, and the average value per square foot of commercial and residential properties. All regressions include year fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The coefficients in Panel A of Table 1 indicate that most of the economically and statistically significant differences in unemployment rate by childcare provision level disappear after controlling for demographics and real estate characteristics. The only remaining significant difference is among childcare deserts and places with licensed childcare available. Desert areas have unemployment rates 0.68 percentage points higher than places with childcare on average. That is approximately 8% of the average unemployment rate in childcare desert areas of California.

On the other hand, there are statistically significant conditional associations between licensed childcare provision and labor force participation. The results in Panel B of Table 1 show that a ten-percentage-points increase in the capacity ratio is associated with an increase of 0.035 percentage points in the female labor force participation rate, or approximately 0.1% of the average female LFP in desert areas. The coefficients in columns 2 and 3 of Panel B suggest that underserved and desert areas are associated with lower female labor force participation. Female LFP is 0.8 percentage points lower in underserved areas compared to adequately served areas and 1.9 percentage points lower in desert areas than in places with licensed childcare available, which are 1.5%[165] and 4.2%[166] of their respective average female LFP.

The estimates in Panel C of Table 1 show that the conditional associations of different licensed childcare provision metrics and the overall LFP are stronger than those with female LFP. A ten-percentage-points increase in the capacity ratio is associated with an increase of 0.042 percentage points in the overall labor force participation rate, or approximately 0.1% of the average LFP in desert areas. Underserved areas have an LFP that is 1.1 percentage points lower on average than the LFP for places with adequate licensed childcare provision, or 2% of the average LFP in underserved cities. Similarly, childcare desert areas have on average a 2.4 percentage points lower LFP than places with licensed childcare available, or approximately 4.7% of the average LFP in desert areas.

Finally, the coefficients in Panel D of Table 1 are the largest of all, although we are not always able to rule out null conditional associations. For example, the estimate in column 1 suggests that the capacity ratio is

165 The average female LFP in underserved areas is ~53.6%, as observed in Figure 10; hence, the estimated coefficient is approximately 1.5% of that average (0.00827/0.5358).

166 The average female LFP in childcare desert areas is ~45.3%, as observed in Figure 10; hence, the estimated coefficient is approximately 4.2% of that average (0.0192/0.4531).

positively associated with the fraction of children under six with all their parents in the labor force; however, it is not statistically different from zero. Underserved areas are associated with an average of 3.8 percentage points lower share of parental labor force participation than areas with adequate licensed childcare provision, or approximately 6.2% of the average share of children with all parents in the labor force in underserved areas. Desert areas also seem to be associated with lower levels of parental labor force participation, but the coefficient is imprecisely estimated, and we cannot rule out a null association.

D. Discussion

The empirical analysis sheds new light on the relationship between childcare and labor in several ways. First, our measurement of childcare supply is more comprehensive than existing datasets because of the added information on small and large family daycares that are particularly popular for infants and toddlers. We are therefore able to create a more nuanced measure of childcare availability, denoted "underserved cities." These locations are quite different from traditional deserts and include more urban areas that impact a larger number of children. Our results show the need to study undersupply more broadly, without focusing exclusively on deserts. Underserved areas have important and unique features that differ from deserts, and they may be the markets in greatest need of support.

Second, we show that underserved and desert cities have both lower female LFP and overall LFP than adequately served cities. Childcare provision is therefore not a benefit that substitutes men's labor for women's labor. Instead, it allows more labor resources to be devoted to work outside the home, increasing the overall productive capacity of the economy. Finally, we are able to document that the relationship between labor outcomes and childcare exists even when controlling for other neighborhood characteristics, including demographics, income, and property prices. These controls do not imply that there is a causal relationship between childcare availability and labor. However, it shows that there is independent predictive power of childcare on labor supply, increasing the possibility that policies that increase childcare availability may have important impacts on labor force participation.

Note that at first glance, the magnitudes of the effects of providing licensed childcare implied by our estimates might seem small; however, it is important to add some context to have a better sense of the magnitudes. For example, think of the average California city in our sample, with a population of 33,000 people and approximately 1,894 children under the age of five. If we want to increase the licensed childcare coverage to be able to enroll an additional ten percent of the children under five, we would need to open four

childcare centers, given the average capacity of almost forty-seven children per center. Our estimates in Panels C and B of Table 1 suggest that this would lead eleven people to join the workforce, five of whom would be women. However, if that extra ten percent childcare coverage pushes the city into having adequate childcare coverage, then our estimates suggest that it could incentivize as many as 289 people to join the workforce, including 110 women. Now, think of the average childcare desert town in our sample. This small town has a population of approximately 740 people and thirty-one children under five. If one small family daycare facility with a capacity of eight children opens in town, it would take the childcare coverage to 25.8% of all children under five. Our estimates in Table 1 suggest that the availability of this new childcare facility could incentivize at least one person to join the workforce or as many as fourteen people, including up to five women.

In each example, the larger estimates suggest that each newly created licensed childcare spot translates into 1.5 additional people joining the workforce in the case of the average city and 1.75 additional people entering the labor force in the case of the average childcare desert city. The smaller effects in each example still seem small; however, keep in mind that labor force participation rates are relatively high and the newly created childcare spots could be substituting some form of informal childcare arrangement. That said, we could expect that in the case of the average California city, 117 of the 189 children newly enrolled in licensed childcare would have all their parents participating in the labor force. That reduces the pool of families whose labor supply decisions could be affected by childcare availability to seventy-two. If we assume that parents are the most likely beneficiaries of childcare availability, then the extra childcare would have incentivized approximately fifteen percent (eleven out of seventy-two) of the people that could possibly be affected. If we repeat this exercise for the average childcare desert town, then licensed childcare availability would incentivize one third (one out of three, as five children would have all their parents already in the labor force) of the people that could possibly be affected.

In summary, our regression results provide support for the hypothesis that childcare availability is an essential form of labor market infrastructure. Increasing childcare provision could lead to increased labor force participation, both overall and among women. There is also evidence that achieving an adequate level of childcare provision, enough to enroll at least half of children under five, could lead to an increase in the number of dual-earner households. At the very least, our analysis suggests that future research is needed to study whether interventions that increase childcare availability would expand labor supply, and subsequently, help achieve the goals of industrial policy.

III
FILLING MARKET GAPS FOR EFFECTIVE INDUSTRIAL POLICY

Our case study shows just one gap in one market that provides essential infrastructure for labor. In this Part, we argue that intervening in all the markets essential to workers should be the first priority in any industrial policy strategy. Filling these gaps would not only create jobs in these sectors, but may have spillovers onto the supply of labor to other sectors. Moreover, compared to "picking winners" among sectors or firms, or to tariffs that simply increase costs for firms and consumers, investing in labor infrastructure is less likely to have unintended negative consequences for workers and firms. After labor infrastructure, industrial policy should prioritize job creation over other goals so that American workers share in the wealth it creates.

Industrial policy requires that production inputs are agile and can be deployed to new problems. In the past, economists have underestimated the stickiness of labor and the losses generated by sectoral change.[167] Economists model production as requiring both labor and capital, where capital is tangible or intangible inputs in the production process that can be acquired through financial investment alone. Labor, in contrast, requires both money and *agreement* by the individual, meaning that the worker must be better off working the job than opting out of the labor force. Labor supply is therefore more constrained than capital. Several changes are driving lower labor supply, including retirement of boomers, low birth rates, low immigration rates, and sectoral shifts.[168] Yet, the American labor force is facing historic lows in the fraction of working age adults participating in the labor force.[169]

Industrial policy without support for labor is unlikely to work. "Trickle down" of tariffs to labor is minimal.[170] At the same time, unfunded mandates are also unlikely to be popular or effective because they may introduce barriers to entry and competition for firms.[171] Therefore, the best way to

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167 *Cf.* David H. Autor, David Dorn & Gordon H. Hanson, *The China Shock: Learning from Labor-Market Adjustment to Large Changes in Trade*, 8 ANN. REV. ECON. 205, 234–35 (2016) (showing that in contrast to contemporaneous positive sentiment of economists towards globalization, the China Shock had significant, persistent negative impacts on U.S. labor markets).

168 *See* Maurer, *supra* note 9.

169 *See* Kalser, *supra* note 9 (describing factors leading to reduced labor force participation).

170 *Cf.* Iain Murray & Narupat Rattanakit, *Tariffs Don't Protect Jobs*, COMPETITIVE ENTER. INST. (July 25, 2024), https://cei.org/opeds_articles/tariffs-dont-protect-jobs [https://perma.cc/EVW9-78HP] (describing how tariffs can create inefficiencies that lead to a reduced number of jobs).

171 *See* Jim Tankersley, *To Tap Federal Funds, Chip Makers Will Need to Provide Child Care*, N.Y. TIMES (Feb. 27, 2023), https://www.nytimes.com/2023/02/27/us/politics/child-care-chip-makers-biden.html [https://perma.cc/X4BN-BEAA] (discussing difficulties among semiconductor manufacturers of meeting unfunded childcare provision requirements imposed as a condition of receiving subsidies under the CHIPS Act).

ensure that workers buy in to industrial policy is to focus directly on increasing labor force participation and worker productivity. There are two categories of interventions that are usually utilized to shift labor supply. The first category includes policies that make work more appealing. Typically, this is done by increasing wages, granting workers flexibility, and helping employers provide benefits to workers.[172] The cost to this intervention is that firms have to pay for most of these changes, and the high costs can slow growth. Moreover, interventions like raising the minimum wage are politically challenging to implement at scale. The second category includes policies that make it more unappealing to opt out of the labor force.[173] Policymakers have proposed changes at the state and federal levels to Medicaid and other public programs to make employment a prerequisite for obtaining benefits.[174] The cost to this approach is the potential that the most disadvantaged individuals would have further decreases in labor productivity due to illness, food insecurity, and other hardships of poverty.

Instead, we propose in this Essay that policymakers should encourage labor force participation and productivity by filling market gaps that constrain supply. For instance, increasing childcare capacity so that workers have access to care and can pursue employment is a rare "win-win" strategy, where both workers and firms benefit. Beyond childcare, focusing on missing labor infrastructure improves labor productivity by serving the dual role of most American adults as laborers and consumers. Investing in laborers by satisfying their consumption needs and improving their welfare will increase productivity. That can be channeled to a variety of enterprises, since workers with additional capacity can use it as they wish. Distortions are therefore minimal, especially relative to "picking winners." Moreover, there will always be a direct effect of more job opportunities available in the supply of labor infrastructure.

However, these policies are more challenging to implement than standard subsidies, which can be channeled to sectors that are already likely to boom in the next several decades. To begin, consider the example of

172 *See* Ryan Nunn, Jana Parsons & Jay Shambaugh, *Labor Force Nonparticipation: Trends, Causes, and Policy Solutions*, BROOKINGS INST. (Oct. 3, 2019), https://www.brookings.edu/articles/labor-force-nonparticipation-trends-causes-and-policy-solutions [https://perma.cc/Z7Z5-M97V] (discussing these types of interventions as "before-tax policies," in contrast to "after-tax policies").

173 *See* Thomas Savidge, *The Work vs Welfare Tradeoff Revisited*, AM. INST. FOR ECON. RSCH. (Feb. 19, 2025), https://aier.org/article/the-work-vs-welfare-tradeoff-revisited [https://perma.cc/4CTA-U9WX] (discussing reductions in welfare benefits as a potential mechanism to encourage work).

174 *See* Elizabeth Hinton & Robin Rudowitz, *5 Key Facts About Medicaid Work Requirements*, KFF (Feb. 18, 2025), https://www.kff.org/medicaid/issue-brief/5-key-facts-about-medicaid-work-requirements [https://perma.cc/6L2Y-23B5] (discussing draft federal legislation and existing state laws requiring Medicaid recipients to be employed).

childcare. In order to bolster the childcare market, a simple tax credit is unlikely to be enough.[175] Childcare is highly regulated, and there are significant barriers to entry through licensing, building codes, and other rules.[176] There are few supply-side subsidies to help deal with things like real estate shortages. Depending on political will, changes to address these problems could be made. For example, policymakers could expand universal pre-K to cover the zero-to-three age group or implement flexible work arrangements to support workers with caregiving responsibilities.[177] Outside childcare, areas to target include market deserts and unraveled markets which implicate productivity. Healthcare, housing, and transportation, along with public investments in infrastructure, public transport, and education, would be helpful in pushing the American workforce to be maximally productive.

Beyond filling gaps in labor infrastructure, industrial policy should focus on creating jobs on American soil.[178] When workers share in the value created by industrial policy, there is more likely to be buy-in from citizens and long-term worker productivity. Moreover, workers are harder to reallocate across sectors than other forms of capital. Therefore, to ensure maximum productivity, workers should be provided with longer term opportunities that will make it worth their time to retrain and move into a different sector. Finally, job-focused industrial policy is most likely to generate income through tax revenue for the United States, making it more sustainable in the long run. Industrial policy that supports other production inputs, including artificial intelligence (AI), should be a lower priority compared to sectors that implicate significant numbers of workers.

CONCLUSION

Industrial policy in the United States is being built on a shaky foundation. Years of commitment to free markets have resulted in limited

175 *See* Maya Katherine Jasinska, State Child and Dependent Care Tax Credits and Their Effects on Child Care Supply 31 (2023) (M.Sc. thesis, University of Oxford), https://bipartisanpolicy.org/download/?file=/wp-content/uploads/2024/02/Maya-Jasinska_State-CDCTC-and-Their-Effects-on-Child-Care-Supply.pdf [https://perma.cc/7KA5-A5RE] (finding that an increase of $1,000 in state tax credits leads to a positive but statistically insignificant increase in the availability of childcare).

176 *See id.* at 17 (discussing regulations facing childcare providers).

177 Under the Biden administration, the original Build Back Better bill would have allocated $400 billion over ten years to make preschool for three- and four-year-olds universal while significantly expanding childcare for younger children. *See* Julie Kashen, *How Congress Got Close to Solving Child Care, Then Failed*, CENTURY FOUND. (Dec. 12, 2022), https://tcf.org/content/commentary/how-congress-got-close-to-solving-child-care-then-failed [https://perma.cc/99ME-V96S].

178 *See generally* RODRIK, *supra* note 8 (analyzing how industrial policy might be crafted to pursue this goal).

support for workers, in favor of a commitment to low production costs for firms. Now the U.S. economy is facing labor shortages that threaten to worsen over time, driven in large part by low labor force participation.

In this environment, the government has turned to industrial policy, such as subsidies and trade restrictions, to spur growth in sectors that are deemed to benefit the public interest. Without a mobile labor force that can quickly re-deploy in preferred sectors, these policies are likely to be a waste of money at best, or a drain on the economy at worst. In this Essay, we lay out the missing component of effective industrial policy—labor infrastructure.

As a primary example of labor infrastructure, we provide novel empirical evidence about the availability of childcare and its role in enabling increased labor force participation. When workers can find care for their children, they are also more likely to work. This association holds true even in regression analysis, where we control for other key determinants of labor supply like wages and cost of living.

Ultimately, we argue that effective industrial policy must prioritize workers. First, we suggest that industrial policy must first target domestic industries that support workers, such as childcare, healthcare, education, and housing. Second, we propose that the next priority for industrial policy should be sectors with a higher labor share, meaning that workers benefit the most. By focusing on the well-being of American workers, new industrial policy can avoid the pitfalls that dogged past efforts and create long-term value for the economy.