The Annual Proceedings of

The Wealth and Well-Being of Nations

2024-2025

Volume XVI: Entrepreneurship and the Wealth and Well-Being of Nations.

David Audretsch

Laura Grube, Editor

The Miller Upton Program at Beloit College

The Wealth and Well-Being of Nations was established to honor Miller Upton, Beloit College's sixth president. This annual forum provides our students and the wider community the opportunity to engage with some of the leading intellectual figures of our time. The forum is complemented by a suite of programs that enhance student and faculty engagement in the ideas and institutions that lay at the foundation of free and prosperous societies.

Senior Seminar on The Wealth and Well-Being of Nations:

Each year, seniors in the Department of Economics & Business participate in a semester-long course that is built around the ideas and influence of that year's Upton Scholar. By the time the Upton Scholar arrives in October, students will have read several of his or her books and research by other scholars that has been influenced by these writings. This advanced preparation provides students the rare opportunity to engage with a leading intellectual figure on a substantive and scholarly level.

Endowed Student Internship Awards:

A portion of the Miller Upton Memorial Endowments supports exceptional students pursuing high-impact internship experiences. Students are encouraged to pursue internships with for-profit firms and non-profit research organizations dedicated to advancing the wealth and well-being of nations.

Student Research Colloquium and Speaker Series:

The department has initiated a research colloquium that gives students the opportunity to read and discuss seminal articles aimed at deepening their understanding of the market process. Students also develop original analysis that applies economic ideas to novel contexts. Colloquium participants receive close mentoring as they craft an article with the eventual goal of publication in a newspaper, magazine, or academic journal. The themes of the research colloquium and annual forum are supported with a speaker series featuring the next generation of scholars working on questions central to our understanding of the nature and causes of wealth and well-being.

Annual Proceedings of The Wealth and Well-Being of Nations:

The keynote address presented by the Upton Scholar is an important contribution to the public discourse on the nature and causes of wealth and well-being. Further, the annual forum includes presentations by noted scholars who expand upon or challenge the work of the Upton Scholar. These presentations are assembled in the *Annual Proceedings of the Wealth and Well-Being of Nations*, which serves as an important intellectual resource for students, alumni, and leaders within higher education.

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Introduction

Laura Grube[1]

1. Introduction

As the Elbert Neese Professor of Economics, it is my honor and privilege to introduce the sixteenth *Annual Proceedings of the Wealth and Well-Being of Nations*.

The Department of Economics and Business at Beloit College developed the Miller Upton Programs to advance understanding of the ideas and institutions necessary for widespread prosperity and human development. Every year, the Upton Forum brings to Beloit College a distinguished, internationally recognized scholar who works within the classical liberal tradition. The Upton Scholar engages with students, faculty, alumni, and friends of the college in an informed dialogue around the nature and causes of wealth and well-being. In 2024, we were honored to host David Audretsch, Distinguished Professor and Ameritech Chair of Economic Development at Indiana University.

In addition to the Upton Scholar, the Forum featured leading scholars whose work complements the work of Professor Audretsch. This cadre of scholars is assembled to further reinforce that the intellectual enterprise of understanding the nature and causes of wealth and well-being is an ongoing project. The essays collected in this volume capture in written form many of the ideas exchanged, challenges posed, and questions considered during the Upton Forum and over the course of the academic year.

Before I introduce the substance of the *Annual Proceedings*, I will say a bit more about the man whom the Forum is named. R. Miller Upton was the sixth President of Beloit College, serving from 1954-1975. President Upton received his Ph.D. in economics from Northwestern University and M.B.A. from Harvard University. He was both a teacher and academic leader; he taught at Washington

1 Laura Grube is the Elbert Neese Professor of Economics at Beloit College.

University (St. Louis), Northwestern University, and Lake Forest College and was the Dean of the School of Business and Public Administration at Washington University (St. Louis) before coming to serve as President at Beloit College. President Upton was a steadfast supporter of the liberal arts and believed that liberal arts colleges are the ideal place to engage the great questions, such as, what policies support wealth and well-being? President Upton was an advocate for the ideals of a liberal society: political freedom, the rule of law, and the promotion of peace and prosperity through the voluntary exchange of goods, services, and ideas. We believe that the Upton Forum encapsulates these values.

2. Upton Scholar David Audretsch on Entrepreneurship and Places

Entrepreneurship is a field that is interdisciplinary, and in turn, there are many definitions of entrepreneurship and therefore, many different kinds of questions that are explored. Within psychology, for example, entrepreneurship is studied most often to understand opportunity identification. How or why do some people "see" opportunities and others do not (Gaglio and Katz 2001)? In sociology, much of the literature on entrepreneurship examines entrepreneurship and social capital or social networks. Depending on where entrepreneurs are in the social structure, what resources might they have on hand, or what connections (through their social network) can they leverage (Aldrich and Zimmer 1986)? Within economics, one line of research in entrepreneurship has been policy-oriented, to ask, how do certain policies or regulations help or hinder entrepreneurship (Klein et al. 2022; this volume chapters 3, 4, and 5)?

As a scholar, Audretsch is interdisciplinary with contributions in economics, management, development studies, and urban planning (to name a few) and prolific. At Indiana University, Audretsch is the Director of the Institute for Development Strategies. He also serves as the editor of *Small Business Economics*. Audretsch is the most cited scholar in business and management, with almost 150,000 citations and a h-index of 171 (at the time this volume was sent to press, August 2025). Audretsch's theory of entrepreneurship may be categorized as "innovation entrepreneurship." And, in addition to explaining the process of innovation, Audretsch studies why some cities or regions are successful and has developed a framework to think about how places can use the resources they have to navigate their own pathways.

In entrepreneurship theory, Audretsch has developed the "knowledge spillover theory of entrepreneurship." As he explains, the knowledge spillover theory of entrepreneurship holds constant assumptions about individuals' characteristics and attributes, such as their preferences towards risk, desire to be one's own boss, or their access to different types of capital (Audretsch et al. 2006: 34). Instead, his theory focuses on the importance of context. Specifically, Audretsch is interested in communities of incumbent firms and organizations, how they pursue or do not pursue ideas, and how entrepreneurs take those ideas that are not commercialized (at first) and bring them to market. In other words, Audretsch focuses on entrepreneurship that "spills over" from other firms and organizations.

One example of the knowledge spillover theory of entrepreneurship that Audretsch cites is the Apple Computer. In 1969, Xerox Corporation, which makes photocopy products, opened a research center in Palo Alto, California (the company was headquartered on the east coast). This Palo Alto Research Center (PARC) was one of the early technology companies in the economic cluster around Stanford University. At this research center, Xerox employees developed many new ideas, including the personal computer and the graphical user interface (GUI). For various reasons, the leadership at the Xerox Corporation did not commercialize all of these new ideas. This is Audretsch's "knowledge filter" – that opportunities need to be perceived as opportunities and often, that does not take place and the idea is never brought to market. According to the story, Steve Jobs and Steve Wozniak visited PARC. The two saw these ideas, believed that they would improve personal computers, and therefore, decided to pursue them. The innovations were incorporated into what became Apple Computer.

Audretsch stresses the role of a "knowledge rich context," or an environment where people are engaged in research and development and interacting with each other to share ideas, help problem solve, and gain feedback. Many times this involves a critical mass of organizations, private firms, and institutions such as universities that support a key industry or industries. This is what Michael Porter (1998) has defined as "an economic cluster." Porter has shown how being a part of a cluster allows companies to be more efficient by providing better access to employees and supplies, access to specialized information, and other complementarities (ibid.: 81). Audretsch emphasizes how these areas have social networks that facilitate information exchange and people who move from firm to firm, facilitating knowledge spillover as they move. It is easy to see how in a knowledge rich context there are many start-ups and small firms (ibid.: 45).

The knowledge spillover theory of entrepreneurship is clearly linked to the study of a geographic place, be it a city, state, or region. In his career, Audretsch has had the opportunity to study economic clusters that give rise to knowledge spillover entrepreneurship, and he has had the opportunity to travel and study economies around the world, most notably Germany. Audretsch's research has evolved to compare the economic policies of various countries and whether they support entrepreneurship, and more recently, to create a framework to consider the strategic management of a place. As Audretsch explains, in the German language there is a word, Standortpolitik that "refers to the efforts, or the strategies of places, including governments, businesses, nonprofit organizations, and residents, to consciously and purposefully make their place better" (2015: viii). Audretsch's framework encapsulates this idea.

In Audretsch's strategic management of place, he identifies four categories that are essential to economic success: (1) factors of production and resources, (2) spatial and organizational dimension, (3) the human dimension, and (4) public policy. Importantly, Audretsch does not prescribe a single way to achieve economic success; rather, his framework is intended to guide thinking about place and to identify how a particular place can leverage these four factors.

Audretsch defines the first element, factors of production and resources, broadly to include physical resources (such as rivers, mountains, or sea coastline), physical capital (e.g. infrastructure investments), knowledge (including from research and development within private firms and universities), and human capital (e.g. skilled and unskilled labor). To this collection of resources, Audretsch makes the point that how they are organized matters too. For example, are there many different firms that operate in the location, or one or two large firms? Is there specialization, something that resembles an economic cluster, in the area? The human dimension is closely related, as it includes identity and image, leadership, and networks and linkages. These networks and linkages, if robust, allow actors to exchange information, learn from each other, and coordinate. Finally, in regards to public policy, Audretsch does not dictate a "codified policy formula" (ibid.: 106). He does advocate for an approach that accesses the voices of all of those in the community.

Together, Audretsch's writing on entrepreneurship and place provides a rich opportunity for scholars to explore interesting questions around wealth and well-being, challenge his arguments, and apply his thinking to new cases. The following section offers summaries of the chapters included in this volume of the

Annual Proceedings. The first chapter is a new contribution by Audretsch entitled, "A Place for Entrepreneurship, or Entrepreneurship for a Place?" Next, several chapters cover the theme of "a place for entrepreneurship," or what are the conditions which support entrepreneurship? Beginning with chapter 6, the volume more closely takes the approach of "entrepreneurship for a place" with several chapters that present new case studies (Janesville, Wisconsin, Beloit, Wisconsin, New Orleans, Louisiana, and Asturias, Spain).

3. New Chapters on Entrepreneurship and Place

In his chapter, Audretsch describes how our thinking on what promotes wealth and well-being for a city, region, and country has changed over the last fifty years. After WWII and through the 1970s, there was an understanding that large corporations – for example, GM – were essential for economic prosperity. Audretsch explains how this idea started to come apart and has, especially in the late 1990s and into the 2000s, been replaced with an emphasis on entrepreneurship. Audretsch ties this intellectual history to studies of places, asking, in his title, "A Place for Entrepreneurship, or Entrepreneurship for a Place?" "A place for entrepreneurship" pays attention to policies that promote entrepreneurship (supply-side); "entrepreneurship for a place" then describes the demand, or what opportunities make sense to support the economic growth of a particular place.

In chapter 3, Siri Terjesen takes on this supply side approach, "a place for entrepreneurship," to describe what policies countries have pursued in order to support expatriate entrepreneurs, or entrepreneurs whose cross-border decision is driven by an interest to pursue a business idea. Governments craft policy in the hope of luring successful entrepreneurs and their firms - those that will generate value (i.e. profits) and employment opportunities. Terjesen finds that those countries which have start-up visas tend to be countries that already have strong institutions that support economic growth (e.g. countries with lower costs to start a business). Still, there are stories of countries such as Ghana, Poland, and Lithuania, that have been innovative and offered diaspora visas to attract entrepreneurs.

Daniel Bennett takes up the research agenda of "a place for entrepreneurship," and asks, "what are the policies that foster entrepreneurship?" in chapter 4. Bennett addresses the question by adding the critical distinction between productive versus unproductive entrepreneurship. Using Baumol's (1990) framework, Bennett explains that certain institutional arrangements and policies incentivize

entrepreneurs to pursue economic growth and improved (societal) well-being, while other environments incentivize entrepreneurs to rent-seek (i.e. reallocating resources without generating value). Bennett places entrepreneurship policies into two categories: interventionist entrepreneurship policy and laissez faire entrepreneurship policy. He then refers to the literature on entrepreneurship to try to identify the general patterns from these types of policy, pointing to impacts on investment crowd-in and crowd-out, employment, formal vs. informal entrepreneurship, entrepreneurial dynamism, and other factors. Bennett's findings ought to be required reading for anyone interested in economic policy.

In chapter five, Abhey Singh Guram and Jasmin Bowers again use Baumol's (1990) framework and also Yandle (1983) and Simmons et. al.'s (2011) Bootleggers and Baptists framework, to explore the opportunity and challenges in eco-entrepreneurship. The authors define eco-entrepreneurship as entrepreneurship that has an ecological benefit and is profitable. Guram and Bowers point to eco-entrepreneurship as an important way to address climate change, providing examples of eco-entrepreneurship such as Tesla, Patagonia, and d.light. However, following the arguments of Baumol (ibid.) and others, Guram and Bowers show how ill-conceived policy can result in rent-seeking. The authors present three case studies to demonstrate the dynamics of public policy, eco-entrepreneurship, and rent-seeking. Guram and Bowers present "guiding principles" that may reduce rent-seeking behavior.

The second half of the volume, chapters 6 through 9, more closely follows the theme of "entrepreneurship for a place." In chapter 6, Oakleigh Ryan applies Audretsch's strategic management of place to consider her adopted hometown of Janesville, Wisconsin over time, beginning at its founding in 1835 to the present. Audretsch's economic history and history of economic thought from chapter 2 are illustrated in Ryan's history, most notably in what she refers to as period 2 "The American Dream" and period 3 "Planning for Disruption." Throughout her chapter, Ryan masterfully ties back to Audretsch's framework. She places an emphasis on the human dimension and skillfully shows how human capital, leadership, and civil society has been the force that injects creative thinking, reorganizes the resources at hand, and provides a steady light – a signal that Janesville will persevere.

In chapter 7, Kathryn Arnold and Nicholas Lanpheer travel approximately 15 miles south on I-90, to present a case of the knowledge spillover theory of entrepreneurship in Beloit, Wisconsin. The authors examine the history of Beloit by in-

vestigating Beloit Corporation and the emergence of "spillover entrepreneurship." Similar to Ryan, the authors dive into the history of Beloit, but rather than use the strategic management of place as their framework, they hone in on the knowledge spillover theory of entrepreneurship to study how three entrepreneurs capitalized on their ideas and founded companies that persist beyond the closure of the Beloit Corporation. Arnold and Lanpheer leverage case studies and interviews with the entrepreneurs to describe how they spotted an opportunity, the steps they took to start their ventures, and what factors enabled them to be successful.

In chapter 8, Haeffele and Grube consider Audretsch's strategic management of place framework, with its emphasis on entrepreneurship and knowledge as tied to place and time, and point to similarities with the Austrian school of political economy. The authors suggest that Audretsch is too narrow to consider only market, or commercial entrepreneurship in his framework. After all, the commercial entrepreneurs that he mentions by name have larger goals than profit maximization (Steve Jobs and Steve Wozniak wanted to change how people work and live). Instead, Haeffele and Grube argue that Audretsch ought to adopt a more broad definition of entrepreneurship (inclusive of social entrepreneurship, for example) and a more broad definition of the outcome as social change (rather than only economic performance). The authors present a case study of post-disaster recovery in New Orleans, Louisiana to demonstrate how entrepreneurs "see" opportunities, engage in social learning, and bring about social change.

Finally, in chapter 9, Amy Tibbitts and Pablo Toral add another lens to the strategic management of place: the framework as a pedagogical tool for teaching undergraduate students about sustainable development. In May 2025, Beloit College Professors Tibbitts (Department of Modern Languages, Spanish) and Toral (Department of Environmental Studies and International Relations), along with the Assistant Director of the Global Experience Office Kathy Landon, took a group of undergraduate students to Asturias, Spain as part of the course, "Building the Green Paradise: Sustainability in Action in Northern Spain." In their chapter, the authors describe how they used the strategic management of place framework, with the four factors, to structure the study of how Asturias has emerged from various political and economic challenges to find economic success through sustainable practices. The chapter provides a history of the region in northwest Spain, as well as details on the structure of the course, illustrating how such frameworks can help to organize learning and show how sectors of society are interconnected.

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First, I want to acknowledge Professor Jerry Gustafson who taught entrepreneurship at Beloit College for many years and established the Center for Entrepreneurship in Liberal Education at Beloit College (CELEB). CELEB promotes entrepreneurship at Beloit College through courses and importantly, co-curricular experiences like the student-run art gallery, TV and media lab, and the Maker Space. As I was planning this Forum, we were also celebrating the 20th anniversary of CELEB, and it seemed like the perfect opportunity to have entrepreneurship be the theme of the Upton Forum. Professor Gustafson understood that entrepreneurship involves the development of self-agency. (By the way, Gustafson is also an alumnus of Beloit College and was a student of President Miller Upton.) Writing on entrepreneurship and entrepreneurship education, Professor Gustafson explains, "a fulfilling life requires a measure of subject mastery, an intellectual presence, and critical thinking. But it also requires that a person is prepared to act on their beliefs and ideas. They must live in the expectation that thought will lead to action and they need skills of effective action." Thank you, Professor Gustafson for your contributions in entrepreneurship at Beloit College.

Next, I want to offer a special thank you to Jennifer Kodl who coordinated the Upton Forum events and served as the Managing Editor of the *Annual Proceedings* since its inception. Jennifer has brought the highest level of professionalism to the Upton Forum. After over twenty years, Jennifer has decided to pursue a new challenge and new role. We wish her the absolute best.

Thank you to the students in the senior seminar in economics for engaging in this topic and welcoming the invited speakers.

Last, but certainly not least, thank you to all the donors of the Upton Forum and programs. Thank you to the Neese Family Foundation for supporting the City and for your generous gift to the Upton Forum. Thank you to other donors and especially Bill and Alison Fitzgerald and Bob and Jerry Virgil, who saw the value of this programming for a liberal arts education.

References

Aldrich, H. and C. Zimmer. 1986. "Entrepreneurship through Social Networks." In D. Sexton and R. Smilor (Eds.) *The Art and Science of Entrepreneurship*. Cambridge, MA: Ballinger Publishing Company, pp. 3-23.

Audretsch, David B. 2015. *Everything in Its Place: Entrepreneurship and the Strategic Management of Cities, Regions, and States*. New York: Oxford University Press.

Audretsch, David B., Max C. Keilbach, and Erik E. Lehmann. 2006. *Entrepreneurship and Economic Growth*. New York: Oxford University Press.

Baumol, W. J. 1990. "Entrepreneurship: Productive, Unproductive, and Destructive." *Journal of Political Economy 98:* 893–921.

Gaglio, C. and J. Katz. 2001. "The Psychological Basis of Opportunity Identification: Entrepreneurial Alertness." *Entrepreneurship Theory and Practice* 28(6): 533-552.

Klein, P. G., R. M. Holmes, Jr., N. J. Foss, S. Terjesen, and J. Pepe. 2022. "Capitalism, Cronyism, and Management Scholarship: A Call for Clarity." *Academy of Management Perspectives* 36(1): 6–29.

Porter, Michael E. 1998. "Clusters and the New Economics of Competition." *Harvard Business Review* 76(6): 77–90.

Simmons, Randy T., Ryan M. Yonk, and Diana W. Thomas. 2011. "Bootleggers, Baptists, and Political Entrepreneurs: Key Players in the Rational Game and Morality Play of Regulatory Politics." The Independent Review 15, no. 3: 367-381.

Yandle, Bruce. "Bootleggers and Baptists - The Education of a Regulatory Economist", Viewpoint, May 01, 1983, https://techliberation.com/wp-content/uploads/2010/12/v7n3-3.pdf

A Place for Entrepreneurship or Entrepreneurship for a Place?

David B. Audretsch[1]

A generation ago, no one looked to entrepreneurship for much of anything, let alone to deliver solutions to the challenges confronting individuals, companies, regions and entire nations. It was not just an economy, but an entire society, where prosperity was driven by large, powerful corporations. Profits, performance, and prosperity were delivered through size and scale, not through the dissension, deviation, and experimentation that is the hallmark of what we call entrepreneurship.

The data tell the story. The most profitable company in the United States, and presumably the entire world, in 1970 was also by far and away the largest. General Motors, the automotive giant, posted the breathtaking profits of $1.71 billion, thanks to a scale of production, as reflected by its massive assets of $24.30 billion. Both the profitability, but also the sheer magnitude of General Motors dwarfed its nearest rivals. Exxon Mobil, with only $1.05 billion of profits earned from $14.93 billion of assets stood in the shadow of the giant automotive colossal, as did Ford Motor, with $547 million of profits from $9.20 billion of assets. What delivered the coveted peak profits was simple – size and scale.

No wonder the top scholars in economics and management were unanimous in their conclusion that size and scale were the requisite conditions for ensuring prosperity (Chandler 1977, 1990). The eminent scholar, Joseph Schumpeter (1942: 132), in *Capitalism, Socialism and Democracy*, argued that company size bestowed an inherent innovative advantage, largely accruing from scale economics emanating from the production of new economic knowledge, "Innovation itself is being reduced to routine. Technological progress is increasingly becoming the business

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of teams of trained specialists who turn out what is required and make it work in predictable ways." As Schumpeter (1942: 106) argued, "What we have got to accept is that (the large-scale establishment or unit of control) has come to be the most powerful engine of…progress and in particular of the long-run expansion of output not only in spite of, but to a considerable extent through, this strategy which looks so restrictive." Scherer (1970: 20-21) echoed Schumpeter's earlier conclusion,

> Previously it was suggested that monopolists, sheltered from the stiff gale of competition, might be sluggish about developing and introducing technological innovations, which increase productivity (reducing costs) or enhance product quality. Yet, some economists, led by the late Professor Joseph A. Schumpeter, have argued exactly the opposite; firms need protection from competition before they will bear the risks and costs of invention and innovation, and that a monopoly affords an ideal platform for shooting at the rapidly and jerkily moving targets of new technology. If this is true, then progress will be more rapid under monopoly than under competition.

The President of the American Economic Association, John Kenneth Galbraith (1956: 87) similarly viewed the large corporation as having an inherent innovative advantage, "Because development is costly, it follows that it can be carried on only by a firm that has the resources which are associated with considerable size." In unequivocally rejecting the Schumpeter of 1911 while endorsing the Schumpeter of 1942, Galbraith (ibid.: 86-87) concluded that,

> There is no more pleasant fiction than that technical change is the product of the matchless ingenuity of the small man forced by competition to employ his wits to better his neighbor. Unhappily, it is a fiction. Technical development has long since become the preserve of the scientist and engineer. Most of the cheap and simple inventions have, to put in bluntly and unpersuasively, been made.

The primacy of scale and size in dictating prosperity was not lost on cities, states, and regions. The policy formula, which was flippantly labelled smokestack chasing by the local economic development policy community, was abundantly clear. If you were fortunate enough to have a large company located at your place,

then the policy priority was to do everything possible to retain them at that geographic location. On the other hand, if your place was not among the fortunate locations bestowed with a large and dominant industrial corporation, then do everything possible to convince them to move to your location (Audretsch 2015).

That the unprecedented economic prowess bestowed by scale and size would unravel came as a shock. But unravel it did, starting in the 1970s. The great industrial giants, such as United States Steel in Pittsburgh, General Motors and Ford Motor in Detroit, and Bethlehem Steel in Gary, Indiana, collapsed within the span of just a few years. As imported automobiles, steel, tires, and television sets from Japan and Germany flooded into what had been an almost exclusively domestic market in the United States, the stalwart American giants hemorrhaged revenue and profits. The United States, and particularly its colossal manufacturing corporations, were no longer the only player in world manufacturing markets (Kindleberger and Audretsch 1983). *Business Week* pondered, "Can America Compete?" (Audretsch 2007). Flush with its victory from World War II,

> The United States was virtually unchallenged as an industrial leader. Americans could make anything, and because their products were the best, they could sell whatever they made, both at home and abroad. But somewhere around 1973, the gravy train was derailed, and it never really has gotten back on track. It may have been a combination of things; Vietnam, the OPEC price shock, the inflation spiral. U.S. producers met fierce competition from foreign industries that churned out high-quality goods made by low-wage workers (ibid.).

The end of the assumed supremacy of American manufacturing was pronounced by Friedman in his aptly titled book, *The World is Flat* (2005) however, the advent of globalization did not inflict universal dismay and misery throughout the developed world. Rather, some places, such as the Bay Area in California, and Austin, Texas, thrived, not despite globalization but because of it. What these places enjoying unprecedented prosperity, even while numerous counterparts across the developed world suffered, had in common was a shift in their core strategy away from prioritizing physical capital and unskilled labor to instead emphasizing knowledge, human capital, and entrepreneurship (Audretsch 2015). The old playbook consisting of a singular strategy, or policy, deployed not just ubiquitously but also unquestioningly by virtually every city, state, region or

place, became replaced by a considerably more nuanced playbook, rich with a plethora of different options and approaches, depending on the specific context, history, and strengths and weaknesses of the particular place. The demise of the singular strategy for places triggered a mandate for a new approach with a multi-strategy playbook, ushering in the strategic management of place (ibid.).

When it came to resources and factors of production, or ingredients in the process of creating value, ideas and knowledge have two qualities that insulate it from global competition – the cost of both generating them but also transmitting them across geographic space results in an asymmetric spatial distribution, resulting in the clustering of knowledge within close geographic proximity to the source producing it. Tom Friedman (2005) observed that *The World is Flat*.

However, the metaphor of a flat earth with a level playing field regardless of location holds more for commodities based on factors of production that can easily and at low cost be moved across geographic space than for innovations drawing on knowledge and ideas. Such knowledge and ideas typically emanate from costly investments in research and development (R&D) and human capital that insulate companies, workers, and their communities from competition at lower cost locations.

Thus, the policy insight emanating from the endogenous growth theory in economics is for high-cost locations, such as those prevalent throughout North American and Europe, to prioritize investments in knowledge (Romer 1986, 1994). However, what was characterized first as the Swedish Paradox and subsequently as the European Paradox, suggested that simply investing in knowledge and ideas, such as research and development (R&D), human capital, and even culture to spur creativity may not suffice in generating a prosperous place (Audretsch 2007). Rather, the knowledge filter impedes knowledge and ideas from spilling over for commercialization in society in the form of innovative activity (Audretsch, Keilbach and Lehmann 2006). Both Sweden and the European Union in the final decade of the previous century made robust investments in knowledge, in the form of spending on research and development (R&D) and enhancing human capital through education and training. The paradox was that innovation and the desired societal prosperity remained elusive. Both Sweden and Europe, as well as thought leaders in policy and business, were reminded that creating new ideas and knowledge is not tantamount to actually reaping the benefits accruing to those costly investments in the form of innovative products, services, and processes (Audretsch 2007).

The causes of the knowledge filter are numerous and, in some cases, foreboding (Audretsch 1995). In some cases, legal restrictions impose a constraint to an organization commercializing knowledge that it created. A famous case involves the transistor, which was invented by William Shockley and Gordan Teal at AT&T. However, an antitrust decree prohibited the telecom giant from commercializing that invention. Similarly, universities and research institutions, as well as other non-profit organizations, do not generally produce commercial products, even though they generate considerable knowledge with the potential to fuel innovations. An even more fundamental challenge confronts any organization generating and presented with new ideas and knowledge – to separate the wheat from the chaff. It is anything but trivial to distinguish an idea or invention that will ultimately fizzle out after introduction into society from one that will become the next big thing. For every smart phone there are multiples of the better forgotten lead slippers and metal detector sandals, which are better left buried in the graveyard of would-be innovations.

Given the heightened uncertainty and asymmetries inherent in innovative activity, perhaps it is more comprehensible how Xerox Corporation, having harvested the pioneering personal computer from its costly investments in research and development and expensive engineering talent, simply walked away, having concluded there was no market for personal computers. The knowledge resulting from expensive R&D that generated the personal computer simply got paralyzed and ultimately rejected in the knowledge filter of the legacy corporation (Audretsch 1995).

And that's where the entrepreneurship comes in. The idea that is left uncommercialized by the legacy corporation or organization generating that knowledge in the first place constitutes an opportunity for an entrepreneur if sufficiently passionate, convinced, and daring to launch a new entrepreneurial venture based on the potential innovation. That is exactly what Steve Jobs and Steve Wozniak did when they founded Apple Computer. Xerox Corporation executives had reached the decision that squandering additional funding to develop a personal computer would not justify the effort and, if it never panned out, could jeopardize their own jobs. Because Jobs and Wozniak were, on the one hand, more optimistic about the market potential in their own incipient hacker community, but also faced a considerably lower opportunity cost, in the paucity of alternatives, they jumped on the entrepreneurial opportunity which the legacy company eschewed. The rest, as they say, is history (ibid.).

Knowledge spillover entrepreneurship characterizes a knowledge opportunity created, but not commercialized or pursued by an existing company or organization. The entrepreneur not only serves as a conduit for the spillover of knowledge from the organization in which it was created to the new entrepreneurial startup commercializing that knowledge through innovative activity, but also as the missing link in the process of actualizing or harvesting the economic and societal potential from costly investments to generate new ideas and knowledge (ibid.). Thus, the resolution to the innovation paradox, albeit the Swedish or European variety, is entrepreneurship.

Knowledge spillover entrepreneurship is not restricted to a particular place, such as Silicon Valley or the United States. Rather, examples abound across the globe. For example, five engineers employed at IBM near Heidelberg, Germany, came up with an idea for a new business software. However, the IBM executives squelched the idea on the grounds that there was not sufficient evidence of a viable market, and in any case, the company preferred to retain its focus on its core competence, mainframe computers. Because they were so passionate about their new idea and convinced of the contribution it could make to society, the five engineers refused to give up. When they approached other technology companies of that era they were similarly rejected. They then turned to the three main banks in Germany at that time for startup finance, only to be told that if the idea had any merit, IBM would be doing it. Finally, they succeeded in procuring early-stage finance to launch SAP, which subsequently grew to be the most successful unicorn in Europe (Audretsch and Lehmann 2016).

Knowledge spillover entrepreneurship generates prosperity not just for the founding entrepreneurs, their employees and ultimately shareholders after going public, but also their communities in the form of sustainable and livable incomes at a high standard of living. The poignant examples of the power of entrepreneurship in addressing societal priorities garnered across the globe and backed by systematic compelling econometric evidence linking entrepreneurship to prosperity at the level of the city, region, state and country (Audretsch, Keilbach and Lehmann 2006), did not escape the attention of public policy. As the President of the European Union, Romano Prodi, offered in response to the European Paradox, "Our lacunae in the field of entrepreneurship needs to be taken seriously because there is mounting evidence that the key to economic growth and productivity improvements lies in the entrepreneurial capacity of an economy" (Audretsch 2007).

The major policy preoccupation in the last third of the last century of over-

coming economic stagnation and creating jobs led to the discovery of the key role played by entrepreneurship for cities, states, regions, and entire nations. Thus, as the policy priority has expanded from job creation, to innovation, economic growth and productivity, social goals, and the inclusion of socially and economically excluded people and communities, entrepreneurship has been viewed as an important vehicle for addressing the most pressing economic and societal challenges. Most recently, the policy goal of sustainability, as advocated by the 17 sustainability goals mandated by the United Nations, has become a policy priority. In particular, the sustainability goals prioritize the environment, social inclusion, and an equitable distribution of wealth and income.

As cities, states, regions, and entire nations shifted to prioritizing entrepreneurship, the entrepreneurial ecosystem was developed and ultimately replaced clusters as the go-to strategy for the strategic management of place (Audretsch 2015). While the latter provided the spatial and structural organization conducive to the performance of legacy corporations, the entrepreneurial ecosystem instead focuses on providing what entrepreneurs and their companies need for success. Places turned increasingly to entrepreneurs and their startups as the catalyst for ideas and innovations to rise to the constant barrage of new challenges confronting society.

The understanding and sense of what motivates people to choose entrepreneurship has similarly evolved over time. A generation ago, the view reigned that the main driver leading people to become an entrepreneur was internal (McClelland 1961). It was the personality characteristics and attitude towards risk and uncertainty, the need for autonomy, control, and independence, as well as their aversion towards conformity that drove people into entrepreneurship.

More recently came the notion of entrepreneurship as a choice responding to the perceived economic opportunities available. As innovation and the underlying new ideas driving new economic activity have gained in importance, the knowledge filter confronting legacy corporations has grown thicker, resulting in more opportunities for entrepreneurship. The prioritization of the goals congruent with sustainability, such as the environment, social inclusion and an equitable distribution of wealth and income, have only served to thicken the knowledge filter and enhance the extent of entrepreneurial opportunities created by legacy organizations, institutions, and companies. A heated debate evolved around whether entrepreneurs are born or made. To the degree that the former holds, in that the inherent personality propensities, proclivities, preferences and aversions,

shape entrepreneurial choice, there seemed little that policy within the context of an entrepreneurial ecosystem could accomplish. However, to the extent that the latter holds, the promise of endogenous entrepreneurship responding to a well-considered entrepreneurial ecosystem is seemingly unbounded in addressing the aspirations of a city, region, state or even an entire nation. Thus, the well-functioning entrepreneurial ecosystem provides a broad and pervasive range and needs for entrepreneurs to prosper and thrive, ranging from early-stage finance to technological know-how and capabilities, a supportive and embracing culture celebrating entrepreneurship, rich and encouraging social networks and social capital and a generous pool of workers equipped with the requisite skills commensurate with the needs of the entrepreneurs from which to draw. As Gordon Moore, the founder of Intel shared about why are places with a vibrant entrepreneurial ecosystem, fueling the city, state, region or country, "Combine liberal amounts of technology, entrepreneurs, capital and sunshine. Add one (1) university. Stir vigorously" (Audretsch 2015).

Why then is the creation and development of a fertile entrepreneurial ecosystem generating vibrant entrepreneurship to attain the coveted economic societal goals so elusive to cities, states, regions and countries, the exception and not the rule?

One answer is the disparity between inducing endogenous entrepreneurs through a fertile entrepreneurial ecosystem and subsequently retaining them at the place. Just as Mark Zuckerberg founded Facebook in Cambridge, Massachusetts, but subsequently moved the company to Palo Alto, California, examples abound of entrepreneurs who changed locations to develop and grow their company. The motivations triggering entrepreneurship are diverse but always with the same result the place spawning the entrepreneur is not the same one which actually harvests many of the benefits accruing to that entrepreneurship.

In the case of Zuckerberg and Facebook, access to venture capital was a primary motive for moving the company. In the case of Mosaic Communications System, which ultimately evolved into Netscape Communications Systems and produced Netscape Navigator, the founder, Marc Andreessen, was a student with four other former students at the National Center for Supercomputing Applications (NCSA) at the University of Illinois. While Champagne-Urbana, where the University of Illinois plays a dominant role, provided an ecosystem sufficient to start the company, ultimately Andreessen departed for the more lucrative talent, finance, social capital, and social network abundant in the Silicon Valley entrepre-

neurial ecosystem. The market value of Netscape reached nearly $3 billion by the end of the 1990s. As Gary Wolfe of *Wired Magazine* (1994) gushed, "Mosaic is not the most direct way to find online information. Nor is it the most powerful. It is merely the most pleasurable way, and in the 18 months since it was released, Mosaic has incited a rush of excitement and commercial energy unprecedented in the history of the Net." Just as entrepreneurs pursue opportunities by changing the organization where they work, they also will change their location to pursue those opportunities (Audretsch 2007).

A different catalyst for the exodus of entrepreneurs can be the reaction of legacy companies in the entrepreneurial ecosystem. Research on the life cycle of companies and industries has found that as the firm evolves from start up, to the growth phase and maturity, success and size enable it to invest more in terms of knowledge creation, such as research and development and human capital (Klepper 2015; Nelson and Winter 1982). However, the knowledge filter becomes more formidable as the company ages and grows. Thus, on the one hand the increased investments in R&D and human capital may generate more new ideas and knowledge as the company grows and matures with success. On the other, the ability of the company to identify lucrative innovative opportunities accruing from those knowledge investments diminishes. The response of companies to a more formidable knowledge filter is to pursue incremental innovation, where the uncertainty is lower. A second response by legacy companies to a diminished ability to innovate is to protect their status quo situation, through rent seeking investments and activities (Olson 1982). The return from protecting the status quo, characterized as economic rents, may exceed those accruing from attempts to innovate.

In their post-World War II heyday, the unrivaled automobile companies of Detroit not only exhibited massive profitability, but also unprecedented investments in research and development as well. Bigger was better. Since General Motors stood head and shoulders above the other large, dominant companies, it stood to reason, as Charlie "Engine" Wilson, who served as Chairman of General Motors, advised the country, "What's good for General Motors is good for America." As David Halberstam (1993: 116) observed, "Driven by the revolutionary vision of Henry Ford, the United States had been the leader in mass production before the war; ordinary Americans could afford the Model-T, while in Europe where class lines were sharply drawn, the rather old-fashioned manufacturers preferred building expensive cars for the rich."

Disruptive and more radical ideas and inventions tended to be ignored and discarded by the legacy corporations in the Detroit automobile industry. For example, a by-product of the success and diffusion of the automobile was an epidemic of unrelenting air pollution. Cities such as Los Angeles were choking from air thick with the carbon laden exhaust rushing out of the tailpipes of automobiles manufactured in Detroit. When the companies' own research and development finally produced a breakthrough, the catalytic converter, the three legacy giant corporations – General Motors, Ford Motor, and the Chrysler Corporation – all balked. Their rent seeking activities led them to invest in expensive lobbying and the garnering of influential policy makers. As Ernie Starkman of General Motors testified before Congress in arguing against the Clean Air Act, "[I]f GM is forced to introduce catalytic converter systems across the board on 1975 models . . . it is conceivable that complete stoppage of the entire production could occur, with the obvious tremendous loss to the company, shareholders, employees, suppliers, and communities" (Halberstam 1993).

Similarly, Richard Klimisch, of the American Automobile Manufacturers Association, argued against the catalytic converter, "The effects of ozone are not that serious . . . what we're talking about is a temporary loss in lung function of 20 to 30 percent. That's not really a health effect" (ibid.).

When Eugene Jules Houdry responded to pursue the opportunity which the dominate legacy automobile companies of Detroit eschewed—to innovate through developing the catalytic converter, the automobile companies did everything in their power to ruin hm, his startup company, and the employees and suppliers, along with everyone involved with the new venture. The efforts of the Detroit legacy corporations to suppress the catalytic converter, as well as Houdry, constituted a conspiracy and violation of the federal antitrust statutes. Legacy companies with dominant power will, in some cases, resort to rent seeking to preserve the status quo rather than grasp opportunities for change through innovation.

Just as knowledge spillover entrepreneurship can induce employees to become entrepreneurs instead, so too can entrenched legacy interests at a place induce would be entrepreneurs to leave. As Albert O. Hirschman (1970) concludes in his seminal*, Exit, Voice and Loyalty*, people, companies and organizations that suffer an insufficient voice and a paucity of loyalty will choose to exit.

The strategic management of place emphasizes the primacy of the identity of people at a place, as well the image of those not at the place, along with the

emotional and other types of connections rooting people, organizations and companies at a particular place (Audretsch 2015). Link (1995) emphasizes that it was the commitment that thought leaders in policy and business, as well as the broader population, as reflected in the title of his book*, A Generosity of Spirit*, which was the essential ingredient in creating the entrepreneurial Research Triangle. Thanks to that generosity of spirit, reflecting the commitment and emotional connection to their place, the region of North Carolina was transformed from among the poorest in the country to one of the most prosperous. The vibrant entrepreneurial ecosystem of Research Triangle provided would be entrepreneurs not only with the broad spectrum of inputs needed to successfully launch a new company, but also a compelling reason to stay home as well.

The attachment to their place led leaders in policy and business in Bilbao, which a generation ago was plagued by stagnation and poverty, rather than depart to a more promising location, to instead invest in changing the image and identity revolving around entrepreneurship and innovation. While the key policy instrument was to attract the first international location of a Guggenheim Museum to their city, the broader impact was to transform the region from a declining industrial region hemorrhaging jobs and prospects, to a hub of innovation and entrepreneurship, revolving around design and hospitality (Audretsch 2015).

Given sufficient emotional connection to a place, or what Hirschman (1970) characterizes as loyalty, and Link (1995) a generosity of spirit, entrepreneurship may be less endogenous, or responsive to, the ability of the ecosystem to provide resources and connectivity that is the supply side and more the needs and challenges of the place that remain unmet by the legacy companies, organizations and institutions that is, the demand side. The nexus between the place and the entrepreneur may then reflect the primacy of the former, with the latter providing the vehicle or conduit to contribute to the place. By contrast, if the entrepreneurial impulse is the prima facia motivation, then the entrepreneurship dominates the locational choice.

Just as students may be drawn to a particular college located at a specific place, if their primary intention is to enhance their human capital, they are likely to move away subsequent to graduation to a location more complementary to their newly acquired human capital. This infamous brain drain has plagued cities, states, regions, and entire countries for decades and even centuries.

Entrepreneurship for a place, where the needs and opportunities of the specific place are prioritized, is undoubtedly rarer than a place for entrepreneurship.

While the latter addresses and provides for the requisite needs of the entrepreneur – the supply side, the former shapes the opportunities that may continue to go unmet in the absence of entrepreneurship – the demand side. High sunk costs that are spatially fixed, either emotional, or financial, are more conducive to entrepreneurship for a place.

The coveted Mittelstand companies of Germany, Austria, Switzerland, and Northern Italy illustrate entrepreneurship for a place. These are typically small, family owned and deeply rooted in their small and rural communities. The most prolific of the Mittelstand companies are characterized as Hidden Champions, which dominate a product niche in a global market. They leverage the specialized resources in the home location, typically a smaller community, to manufacture products of such a high and differentiated quality that they are shielded from competition from large, mass production rivals (Audretsch and Lehmann 2016).

For example, the Director of the Chamber of Commerce in Reutlingen, which is located in the *Bundesland* of Baden- Württemberg, Wolfgang Epp, attributes the prosperity of the region to the Mittelstand (Audretsch and Lehmann 2016). The Mittelstand companies, including their owners, employees and many of their suppliers choose to remain in the relatively small communities rather than depart for more lucrative opportunities in Munich. Epp highlights the Swabian Alb region where Hidden Champions, such as Mayer & Cie, which produces knitting machines, Groz-Beckert, which produces knitting needles, and Stoll, which also produces knitting machines, have leveraged the highly skilled labor from the apprentice system and local university of applied science (*Fachhochschule*) Reutlingen to create world class products that are top quality in their niches (Audretsch and Lehmann 2016).

Many of the high performing Hidden Champions of Germany are located in the relatively rural regions of the southwest of Germany, such as Heilbronn, Wertheim, Reutlingen or Crailsheim. Crailsheim is located in the *Bundesland* of Baden-Württemberg, and has been characterized as the Packaging Valley of Germany, with a cluster of *Mittelstand* companies producing high specialized machines in the packaging sector, mainly for companies in chemicals and pharmaceuticals around the globe. Other high performing Mittelstand companies are concentrated in even smaller regions, which could be characterized as obscure villages, such as Micon in Nienhagen, Mennekes in Kirchhundem, Tetra in Melle, and Poly-Clip System in Hattersheim. Because highly skilled workers and their Mittelstand employers would rather remain in their *Heimat*, or home location,

they eschew more lucrative opportunities and engage in entrepreneurship to, at least partly, benefit the region through the provision of jobs, stability, and a shared vision of prosperity (Audretsch 2015).

Wolfgang Johann von Goethe observed some two centuries ago, "The greatest gift a parent can give to their children are roots, so they know where they come from. The second greatest thing is the wings to escape those roots." What all entrepreneurs have in common is the wings. The prima facia experience of an entrepreneur is to reject or leave the status quo known for the unknown. A place for entrepreneurs provides the coveted roots needed for the entrepreneur to create those wings and flourish, wherever their entrepreneurial journey may take them. If the roots are strong enough, however, some entrepreneurs will use those wings to enhance their place.

How is an entrepreneur to discern between whether theirs is a place for entrepreneurship or instead entrepreneurship for a place? Perhaps the insight of the poet laureate, Robert Frost (1923), provides some guidance in his closing of "Stopping by Woods on a Snowy Evening,"

> The woods are lovely, dark and deep
> But I have promises to keep
> And miles to go before I sleep
> And miles to go before I sleep

References

Audretsch, David B., Max Keilbach and Erik E. Lehmann. 2006. *Entrepreneurship and Economic Growth.* New York: Oxford University Press.

Audretsch, David B. and Erik E. Lehmann. 2016. *The Seven Secrets of Germany.* New York: Oxford University Press.

Audretsch, David B. 1995. *Innovation and Industry Evolution.* Cambridge: MIT Press.

Audretsch, David B. 2007. *The Entrepreneurial Society.* New York: Oxford University Press.

Audretsch, David B., 2015. *Everything in Its Place: Entrepreneurship and the Strategic Management of Cities, Regions, and States*. New York: Oxford University Press.

Chandler, Alfred. 1977. *The Visible Hand: The Managerial Revolution in American Business*. Cambridge: Belknap Press.

Chandler, Alfred. 1990. *Scale and Scope: The Dynamics of Industrial Capitalism*. Cambridge: Harvard University Press.

Friedman, Thomas. 2005. *The World is Flat.* London: Lane.

Frost, Robert. 1923 "Stopping by Woods on a Snowy Evening," Edward Connery Lathem (ed.),*The Poetry of Robert Frost.* New York: Henry Holt and Company.

Galbraith, John Kenneth. 1956 (1976 third edition). *The Affluent Society.* Boston: Houghton Mifflin.

Halberstam, D. 1993. *The Fifties.* New York: Villard Books.

Hirschman, Albert O. 1970. *Exit, Voice and Loyalty.* Cambridge, Mass.: Harvard University Press.

Kindleberger, Charles and David B. Audretsch. 1983. *The Multinational Corporation in the 1980s.* Cambridge, Mass.: MIT Press.

Klepper, Steven. 2015. *Experimental Capitalism: The Nanoeconomics of American High-Tech Industries.* Princeton: Princeton University Press.

Link, Albert N. 1995. *A Generosity of Spirit: The Early History of the Research Triangle Park.*

Research Triangle Park: Research Triangle Foundation of North Carolina.

McClelland, David. 1961. *The Achieving Society.* New York: Van Nostrand.

Nelson, R. and Winter, S. G. 1982. *An Evolutionary Theory of Economic Change.* Cambridge: Belknap Press.

Olson, Mancur. 1982. *The Rise and Decline of Nations: Economic Growth, Stagnation and Social Rigidities.* New Haven: Yale University Press.

Romer, Paul. 1986. "Increasing Returns and Long-Run Growth" *Journal of*

Political Economy 94(5): 1002-37.

Romer, Paul. 1994. "The Origins of Endogenous Growth Theory." *Journal of Economic Perspectives* 8: 3-22.

Scherer, F.M. 1970. *Industrial Market Structure and Economic Performance.* Chicago: Rand McNally.

Schumpeter, Joseph A. 1911. *Theorie der wirtschaftlichen Entwicklung.* Berlin: Duncker und Humblot.

Schumpeter, Joseph A. 1942. *Capitalism, Socialism and Democracy.* New York: Harper.

A Place for Entrepreneurship: Start-up Visas

Siri Terjesen[1]

1. Introduction

Across the United States, including at Beloit College[2], international students are considering careers to stay on in the country, in both traditional organizations and also as entrepreneurs. Perhaps the most famous international student who stayed on in the U.S. to pursue entrepreneurship is Elon Musk who co-founded two unicorn ventures, SpaceX and OpenAI. Another example is Sherry Wei who left China to undertake a PhD in electrical engineering from Purdue University and founded cloud network platform Aviatrix, now valued at $2 billion.

Twenty-five percent of the U.S. unicorns have a founder who came to the U.S. as an international student at a university, and then stayed on another visa such as the H1B. The remaining seventy-five percent are founders who came to the U.S. through another visa channel such as coming over as a child with parents or on an employment visa or a highly-skilled immigrant visa. According to 2022 research by the new National Foundation for American Policy (NFAP), immigrants started 55% of America's startups that are now valued over $1 billion—that is 319 of the 582 unicorn firms in the U.S[3]. According to the NFAP, these 300 immigrant-founded U.S. firms is $1.2 trillion, which is greater than the values of all the firms listed on the main stock market of many countries such

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2 Special thanks to Beloit international students Hathan (Morocco), Toka (Georgia), and Alex (Benin) for sharing their stories during my visit on campus. This chapter is dedicated to past, current, and future Beloit students pursuing their entrepreneurial dreams.

3 When including the children of immigrants, that number reaches 64% of all American start-ups.

as Argentina, Colombia, Peru, Portugal, Ireland, Mexico, and Russia. NFAP's earlier study in 2018 revealed similar findings as although there were only 91 unicorns at the time, 55% (n=50) had a unicorn founder. In just four years, there was a 500% increase in unicorn ventures and immigrant-founded unicorns. Each immigrant-founded, privately held unicorn creates about 859 jobs. When including the many immigrant-founded unicorn companies that have gone public or been acquired since 2016, such as Moderna and Zoom, then immigrant entrepreneurs' company value reaches $1.5 trillion. Other now-public firms include Uber, Crowdstrike, and Cloudfare.

This chapter explores national government policy to prioritize entrepreneurship, with a focus on *expatriate entrepreneurs*—that is individuals whose cross-border migration decision is driven by an interest to exploit business opportunities in an entrepreneurship ecosystem that is ideal for the venture. Next, in section 3, three distinct types of start-up visas are profiled (self-employment start-up visas, incubator-facilitated start-up visas, and innovative business start-up visas). These start-up visas tend to be initiated by countries that already have very strong entrepreneurship ecosystems for domestic entrepreneurs and want to attract more entrepreneurs. These start-up visas are then compared to the traditional investor visas in existence for decades. The chapter continues in section 7 by looking at some new phenomenon in start-up visas including business incubators that are available to entrepreneurs once a start-up visa is successfully obtained, and the opening of countries to diaspora, with some expatriate entrepreneurship case studies in Ghana, Poland, and Lithuania. This chapter concludes with implications for future research.

2. National Governments Prioritize Entrepreneurship

Thanks to the work of David Audretsch and other researchers, the primary goal of many national government policies is to support and expand current and aspiring entrepreneurs' efforts in their countries, particularly high quality and high growth ventures rather than subsidizing ventures with little growth potential (Shane 2009; Carter et al. 2015). Indeed, the fastest growing 1% of all firms generate almost all net job growth (Henrekson & Johansson, 2010). Despite the great promise of these "gazelle" ventures, very few entrepreneurs manage to establish highly successful ventures. A large literature explores other groups of entrepreneurs who are distinct from expatriate entrepreneurs. These categories

include immigrant, ethnic, transnational, and returnee entrepreneurs. Immigrant entrepreneurs who tend to rely on self-employment, family labor, and local market presence (Bonacich 1973) and have distinct finance patterns (Malki, Uman, and Pittino 2022). Ethnic entrepreneurs use fellow co-ethnics to establish their preferred market segments (Basu and Goswami 1999) and also rely on greater tie strength and network range to ensure venture performance (Patel and Terjesen 2011). Transnational entrepreneurs typically rely on resources and opportunities that are based on their business linkages in their country of origin (Drori, Honig, and Wright 2009; Portes, Guarnizo, and Haller 2002; Terjesen and Elam 2009). Returnee entrepreneurs return from time abroad in order to set up business in their home country, for example the many Chinese "sea turtles" who returned from studies and work in the U.S. to establish high tech businesses in a Chinese science park such as Beijing's Zhongguancun (Wright et al. 2008).

Expatriate entrepreneurs are distinct from these other types of entrepreneurs in that expatriate entrepreneurs' cross-border migration decision is driven by an interest to exploit business opportunities in an entrepreneurship ecosystem that is ideal for the venture. Expatriate entrepreneurs may actively compare entrepreneurial ecosystems around the world in order to identify the best destination that will support the development of their business ideas.

Table 1 *(page 38)* distinguishes expatriate entrepreneurship from immigrant and international entrepreneurship.

3. Start-up Visas around the World

Around the world, countries are increasingly developing policies to attract expatriate entrepreneurs which can be broadly labeled "start-up visas." Start-up visa programs seek to attract entrepreneurs who will launch new ventures in the host country by providing the entrepreneurs with legal residence during a limited period of time. Importantly, the visa and residence extension are conditional on the ventures' positive growth. The rapid development and growth of start-up visa programs is a testament to the fierce global competition to attract entrepreneurs: entrepreneurs who are willing to expatriate can choose among many attractive entrepreneurial ecosystems and ultimately relocate to the country they perceive to be the best fit for their ventures.

Start-up visa programs can be classified according to the degree of commitment required by the host countries (e.g., entrepreneurial capital, residency) and

Table 1. Distinguishing expatriate entrepreneurship from immigrant and international entrepreneurship

		Immigrant entrepreneurship				International entrepreneurship
	Expatriate entrepreneur	**Immigrant entrepreneur**	**Business immigrant**	**Ethnic entrepreneur**	**Minority entrepreneur**	**Transnational entrepreneur**
Definition	Individuals who engage in cross-border migration in order to exploit a business opportunity in an entrepreneurial ecosystem that is ideal for the venture and whose expatriation decision is not affected by the desire to obtain residency in another country	Immigrants that that are pushed into entrepreneurship in order to survive economically. Sometimes the immigrant entrepreneurs are linked by a migration network that includes both migrants, non-migrants and non-migrants that share an origin (Butler & Greene, 1997)	Entrepreneurs with a proven track record and substantial economic capital, who are partially motivated to relocate from their countries by obtaining citizenship (Ley, 2003)	"Ethnic enterprises are small ventures located in immigrant neighborhoods that employ co-ethnics, or others of the same nationality, race, or culture as the business's owner, and cater to an ethnic clientele." (Sequeira, Carr & Rasheed, 2009: 1028)	Entrepreneurs who are not part of the majority population (e.g., women, immigrants, ethnically-defined minorities). Launch firms due to lack of opportunities in the dominant culture (Reynolds, 1991)	"Entrepreneurs that migrate from one country to another, concurrently maintaining business-related linkages with their former country of origin and currently adopted countries and communities" (Drori, Honig & Wright, 2009: 1006)
Typical motivation	Opportunity-based	Necessity-based	Necessity or opportunity-based	Necessity-based	Necessity-based	Opportunity-based
Migration	Circular	One way	One way	One way	One way	Circular or one way
Business characteristics	Business ideas that can be launched from many potential host countries	Generally small and low-growth businesses that rely heavily on self-employment and family labor	Driven by the aim of obtaining residency in the new country and in many cases do not develop major enterprises in the host country	Focuses on ethnicity or groups who have similar migration experiences. Tied together by ethnic origin or cultural heritage	Businesses must often overcome barriers in terms of educational credentials, skills and work experience	Concurrently maintain business-related linkages with their former [home] country of origin, and currently adopted [host] countries
Perception of institutional environment	Differences in institutional environment is a major impediment	Can be a major growth inhibitor	The institutional environment in the new country is often a driver for migration	Can be a major growth inhibitor, that they try to overcome with ethnic resources	Discrimination is often a major growth obstacle	Well aware of both home and host country institutional environments

Source: Volchek, Efendic, & Terjesen, 2016

also by the resources provided to entrepreneurs (e.g., financial capital, social networks). There are three distinct sub-groups of visas: self-employment start-up visas, incubator-facilitated start-up visas, and innovative business start-up visas.

Self-employment start-up visas are available to expatriate entrepreneurs regardless of the industry of their proposed business. The key requirement is that authorities rate the business positively, and the entrepreneur can fulfill the requirements to either support him/herself or surpass a net assets threshold. Importantly, the self-employment start-up visa programs focus on the characteristics of the ventures that the entrepreneur wants to establish. Countries aim to offer start-up visas to immigrant entrepreneurs who aspire to launch fast-growing firms, but do not yet possess the high level of wealth, entrepreneurial experience, and education that was previously required to become a business immigrant. The start-up visa programs are designed to limit the entry of the comparatively much larger population of would-be immigrants who are primarily motivated to obtain a residency permit and pursue comparatively passive income. Among the few empirical studies of the results of these programs, a recent NBER working paper indicates that Canada's start-up visa has attracted a number of Americans of Asian descent and comparative few Americans of Hispanic descent (Lee and Glennon 2023).

Table 2 provides an overview of seven countries' start-up visas.

Table 2 Start-up Visas around the world

Country	Degree req'd	Visa duration	Boot-strappers	Visa fees (in US $)	Personal funds	Minimum investment	Process-ing time
Canada	No	Permanent	Yes	$1,180	$9,700	$0	365 days
Estonia	No	12 months	Yes	$88	$1,994	$0	60 days
Latvia	No	36 months	Yes	$221-443	$5,720	$0	30 days
Lithuania	No	12 months	Yes	$168	$8,173	$0	30 days
Finland	No	24 months	Yes	$390	$26,760	$0	90 days
Denmark	No	24 months	Yes	$282	$29,485	$0	45 days
Netherlands	No	12 months	Yes	$252	$15,224	$0	30 days

Source: https://immigrantfounders.com/startup-visas/

Incubator-facilitated start-up visas are a novel type of visa that is offered to expatriate entrepreneurs who are admitted to be part of an incubator or accelerator program, which started in 2010. These programs provide support services

and grants to help the firms establish operations and to cover start-up expenses and living costs during the start-up phase. The idea is that the incubator can both constrain and empower expatriate entrepreneurs (Engelen 2001). The most successful incubator-facilitated start-up visa is Start-Up Chile which has, since inception in 2010, brought over 3,000 start-ups (6,000 entrepreneurs) ventures from more than 88 countries (Start-Up Chile 2025). By contrast, the incubators Sirius UK, LaunchPad Denmark, and NewCo Finland have all ceased to exist within ten years of founding. Sirius UK was founded in 2013 by a consortium of private companies and charities on a non-for-profit basis working with the Department for International Trade. Sirius facilitated visas, seed funding, office space, mentors, and other resources, and was discontinued in 2019. LaunchPad Denmark was announced with considerable publicity in 2013 as an idea, but discontinued within that year.

Innovative business start-up visas are available to expatriate entrepreneurs who launch business in industries that the government classifies as innovative. The closest example of this in the U.S. is the "International Entrepreneur Rule" (IER) which is focused on startup founders with extremely high potential for rapid growth and job creation. To qualify, entrepreneurs must own at least 10% of a start-up that is less than five years old, secure significant U.S. investment or funding (varies by funding source: if qualified investor then $311,071; if government award/grant then $124,429), demonstrate high potential for growth, and be active in the company. The visa is for a five year period, after which revenues must reach $622,142 to be re-paroled.

4. Path Dependency of Start-up Visas

National governments' start-up visas vary significantly in their degree of due diligence required of and the time granted to expatriate entrepreneurs. Most countries with start-up visas are ranked among the world's top twenty most entrepreneurial countries and also have the fewest costs and days to start a business. Hence, a country that seeks to launch a start-up visa without first possessing a robust entrepreneurial ecosystem conducive to growth may have difficulties attracting the most qualified expatriate entrepreneurs, given that many of the world's most attractive entrepreneurial ecosystems offer start-up visas. This might lead to the possibility that any new country that seeks to introduce a start-up visa program and does not have a comparatively favorable entrepreneurial ecosystem must

lower its requirements for financial and human resources and/or introduce an incubator program in order to successfully attract expatriate entrepreneurs. There is a widely held assumption among policymakers that expatriate entrepreneurs will disseminate knowledge to local entrepreneurs.

5. Investor Visas

Although the visa does not require significant capital or work experience, the self-employment start-up visa is quite similar to investor visa schemes in traditional business immigrant programs that require some minimum investment by entrepreneurs and also guarantee that the venture will meet requirements for a minimum amount of full-time jobs created. These investor programs have been established in many countries since the 1970s to improve a country's economic growth by attracting wealthy foreign entrepreneurs and investors with significant business experience. For example, since 1990, the U.S. EB-5 Immigrant investor visa requires an investment in a new commercial enterprise and currently has a general capital investment requirement of US $1,050,000 ("EB-5" 2024). President Trump recently suggested increasing this cap to US $5,000,000, calling this a "Gold Card" visa, but so far no legislation has been formally proposed. The other countries currently offering investor visas are: Australia, Austria, Canada (with a separate program for the Québec province), Costa Rica, Cyprus, Greece, Hong Kong, Hungary, Italy, Jersey (U.K.), Latvia, Luxembourg, Malaysia (offers both a My Second Home and a Premium Visa program), Malta, Mauritius, Monaco, Montenegro, Namibia, New Zealand, Panama, Portugal, Singapore, Switzerland, Thailand, UAE, United Kingdom, and Uruguay.

6. U.S. Phenomenon: Business Incubators Once Start-up Visa Obtained Separately

Expatriate entrepreneurs entering a new country face several challenges in starting a business. Business incubators aim to facilitate growth by providing a supportive environment for expatriate entrepreneurs through office space, shared equipment and administrative services, and social networks. These incubators also can provide support for both formal (e.g. regulatory) and informal (e.g., normative, cognitive) institutions. These incubators are typically funded by a mix of public and private funds. In many business-oriented cities across the U.S.,

these efforts are termed "international accelerator" or "incubator" programs such as International Accelerator in Austin, Texas, which is a 12 month program which has assisted 46 start-ups from 23 countries with a total of $155m in capital raised and over $1B valuation. Another example is the Global Ventures Program at Florida Atlantic University's Research Park which attracts companies from all over the world, but has special programs to bring in expatriate entrepreneurs from Latin America. These business incubators are only open to expatriate entrepreneurs who have already acquired a visa through the routes for self-employment, innovative, or (traditional) business investor, and do not provide a visa.

7. New Phenomenon: Diaspora Visas

Many countries around the world offer visas for diaspora entrepreneurs. The best known case is Israel which, since 1948, has welcomed Jewish people from all over the world. Many of these diaspora established firms are located in Israel and in other communities (Elo, Täube, and Volovelsk 2019). Following the Russia-Ukraine War, in April 2022, Israel opened up the visa pathway for high tech experts to come to Israel from the Ukraine, as employees or as entrepreneurs, with no minimum salary requirement.

Several other countries around the world are initiating visas for diaspora entrepreneurs. Ameyaw's doctoral dissertation (2025) explores the country of Ghana's policy to attract immigrants of African descent, many of whom aspire to start businesses in Ghana. Khvatsik, Malki, and Terjesen (2025) investigate the policies in Lithuania and Poland to attract Belarusians fleeing political prosecution, and how these policies have changed over time.

7.1 Ghana

As described in Ameyaw (2025), Ghana's policy efforts began in 2000 with the passage of "Right of Abode" [Section 17 in Ghana's Immigration Act, Act 573] providing residency rights to any persons of African descent. As the policy was not taken up much in the ensuing nearly two decades, in 2019, the Government of Ghana initiated the "Year of Return" in 2019 to welcome back anyone of African descent to the country, which led to very high tourism. Subsequently, the government launched a ten year (2020-2030) initiative titled "Beyond the Return" to try to generate the diaspora to consider long-term settlement, investment,

and citizenship. These efforts have led to over 2,500 African Americans granted Ghanaian citizenship, and about 5,000 have permanently relocated to Ghana (Kaledzi 2023; Risemberg 2025). A growing number of individuals from the diaspora have launched businesses across various sectors, including tourism, agriculture, real estate, technology, and the creative industries. Ameyaw (2025) identifies a four-phase shift in the expatriate entrepreneurs to Ghana who move through activation to commitment, anchoring, and finally confirmation. He finds that the expatriate entrepreneurs' three distinct identity pathways—leadership, survivalist, and assimilationist—each correspond to an occupational outcome: opportunity entrepreneurship, necessity entrepreneurship, or formal employment.

7.2 Poland and Lithuania

Following political persecution, Poland and Lithuania implemented targeted programs to facilitate the relocation of Belarusians, under a humanitarian context, but with a dual economic benefit. The Poland Business Harbour program was targeted to IT professionals, start-ups, small and medium-size enterprises, and also large companies to help them relocate from Belarussia to Poland. This program streamlined processes, bringing over 75,600 Belarusians to Poland, many of whom became entrepreneurs. In 2020, Lithuania also developed a fast-tracked simplified immigration program which led to 47,600 Belarusian citizens migrating in the subsequent five years, many of whom became entrepreneurs. Lithuania then founded a dedicated startup hub Imaguru in 2021 to help Belarusian entrepreneurs access mentors, infrastructure, and other support for their ventures. Through a series of interviews and documentary evidence, Khvatsik, Malki, and Terjesen (2025) show that Polish and Lithuanian support for Belarusian immigrants, including entrepreneurs, began with a humanitarian welcome (2020-21) and was followed by more economic rationale (2022-23). In the most recent period, both countries have tightened their visa requirements in a security-driven migration control phase (2023-24).

8. Conclusions and Future Research Directions

Expatriate entrepreneurship through start-up visas and incubators is an exciting phenomenon ripe for further research which can then lead to better policy and practice outcomes. Future research can apply theoretical lens' such as social

capital, practice, institutional, and resource dependency theories to understand which expatriate entrepreneurs pursue entrepreneurship in a new host country. A second promising direction is to look at the effectiveness of government policy on start-up visas and incubators. As illustrated in this chapter, policy is quite heterogenous, as are the results, for example with only one start-up visa incubator still operating more than a decade after founding. This line of research should explore inputs and outcomes at entrepreneur, venture, incubator, and country levels. A third promising direction involves the changes over time, with various external factors.

References

Ameyaw, A.-K. 2025. Entrepreneurship and Public Policy. PhD Dissertation. Florida Atlantic University.

Audretsch, D. 2025. "A Place for Entrepreneurship, or Entrepreneurship for a Place?" June and Edgar Martin Memorial Lecture, Upton Forum. Friday, November 15, 2025. Beloit College, Beloit, Wisconsin.

Basu, A. and A. Goswami. 1999. "South Asian entrepreneurship in Great Britain : factors influencing growth." *International Journal* 5: 251-275.

Bonacich, E. 1973. "A theory of middleman minorities." *American Sociological Review 38*(5): 583-594.

Butler, J.S., and P.G. Greene. 1997. "Ethnic entrepreneurship: The continuous rebirth of American enterprise." In D.L. Sexton and R.W. Smilor (eds.), *Entrepreneurship 2000.* Chicago: Upstart, pp. 267-289.

Carter, S., S. Mwaura, M. Ram, K. Trehan, and T. Jones. 2015. "Barriers to ethnic minority and women's enterprise: Existing evidence, policy tensions and unsettled questions." *International Small Business Journal 33*(1): 49-69.

Drori, I., B. Honig, and M. Wright. 2009. "Transnational entrepreneurship: An emergent field of study." *Entrepreneurship Theory and Practice* 33(5): 1001-1022.

EB-5 Immigrant Investor. 2025. Department of Homeland Security. Available at *http://www.uscis.gov/eb-5*. (Accessed May 2025).

Elo, M., F, Täube, F. and Volovelsky. 2019. "Migration 'against the tide': Location and Jewish diaspora entrepreneurs." *Regional Studies 53*(1): 95-106.

Engelen, E. 2001. "'Breaking in' and 'breaking out': A Weberian approach to entrepreneurial opportunities." *Journal of Ethnic and Migration Studies* 27(2): 203-223.

Henrekson, M., and D. Johansson. 2010. "Gazelles as job creators: a survey and interpretation of the evidence." *Small Business Economics 35*(2): 227-244.

Kaledzi, I. 2023. "Back to roots: Why African Americans are flocking to Ghana." DW. January 16, 2023. Available online at: https://www.dw.com/en/back-to-roots-why-african-americans-are-flocking-to-ghana/a-64403580. (Accessed May 2025).

Khvatsik, Y., B. Malki, and S. Terjesen, S. 2025. "Belarus entrepreneurs in Poland and Lithuania." Working paper.

Lee, S.R. and B. Glennon. 2023. *The effect of immigration policy on founding location choice: Evidence from Canada's start-up visa program* (No. w31634). National Bureau of Economic Research.

Ley, D. 2003. "Seeking homo economicus: The Canadian state and the strange

story of the business immigration program." *Annals of the Association of American Geographers* 93(2): 426-441.

Malki, B. 2024. "Responding to financing uncertainty in complex settings: the case of immigrant entrepreneurs from the Arab world in Sweden." *Entrepreneurship and Regional Development* 36(3-4): 366-385.

Malki, B., T. Uman, and D. Pittino. 2022. "The entrepreneurial financing of the immigrant entrepreneurs: A literature review." *Small Business Economics* 58: 1337-1365.

National Foundation for American Policy (NFAP). 2022. Immigrant entrepreneurs and U.S. billion dollar companies. Available online at https://nfap.com/research/new-nfap-policy-brief-immigrant-entrepreneurs-and-u-s-billion-dollar-companies/. (Accessed May 2025).

Patel, P., and S. Terjesen. 2011. "Complementary effects of network range and tie strength in enhancing transnational venture performance." *Strategic Entrepreneurship Journal* 5(1): 58-80.

Polish Investment and Trade Agency. 2022. *Poland Business Harbour – this popular government program has once again been expanded!* Polish Investment and Trade Agency. Available online at: https://www.paih.gov.pl/en/news/20220905-poland_business_harbour_program. (Accessed May 2025).

Portes, A., I. E. Guarnizo, and W. J. Haller. 2002. "Transnational entrepreneurs: An alternative form of immigrant economic adaptation." *American Sociological Review* 67(2): 278-298.

Risemberg, A. 2025. "Come home, Ghana told the African diaspora. Now some Black Americans take its citizenship." AP News. Accra. January 3. Available online at: https://apnews.com/article/ghana-diaspora-black-americans-citizenship-f0558892453aceb2eae1a7a6e2cb276d. (Accessed May 2025).

Sequeira, J. M., J. C. Carr, and A. A. Rasheed. 2009. "Transnational entrepreneurship: Determinants of firm type and owner attributions of success." *Entrepreneurship Theory and Practice 33*(5):1023-1044.

Shane, S. 2009. "Why encouraging more people to become entrepreneurs is bad public policy." *Small Business Economics 33*(2): 141-149.

StartUp Chile. 2025. Available online at: https://startupchile.org. (Accessed May 2025).

Terjesen, S. and A. B. Elam. 2009. "Transnational entrepreneurs' venture internationalization strategies: A practice theory approach." *Entrepreneurship Theory and Practice* 33(5): 1093-1120.

Volchek, D., N. Efendic, N., and S. Terjesen. 2016. "Expatriate Entrepreneurship: Start-up visas and incubators." Babson Conference.

Wright, M., X. Liu, T. Buck, and I. Filatotchev. 2008. "Returnee entrepreneurs, Science park location choice and performance: An analysis of high-technology SMEs in China." *Entrepreneurship Theory and Practice 32*(1): 131-155.

Entrepreneurship Policy and the Wealth of Nations

Daniel L. Bennett[1]

1. Introduction

There is growing consensus that entrepreneurship, the process of identifying business opportunities that solve problems and create value for others under conditions of uncertainty (Foss et al. 2019), is one of the most important drivers of socio-economic development. Scholars recognize that countries and regions that are more entrepreneurial are also more prosperous. Entrepreneurs capture only a portion of the value they create (Nordhaus 2004). However, the broader benefits spill over to society, fueling innovation cycles that drive long-term socio-economic progress (Audretsch et al. 2006; McCloskey 2016). This progress is evident in more quality jobs, better and cheaper products, and solutions to societal challenges like poverty and environmental degradation. Together, these improvements raise living standards, pointing towards entrepreneurship as a key determinant of the wealth and well-being of nations.

Given the strong theoretical and empirical evidence linking entrepreneurship to the wealth of nations, it is understandable that policymakers are increasingly focused on creating a policy environment that fosters entrepreneurship. Policymakers have strong incentives to foster entrepreneurship. Entrepreneurs create jobs, providing policymakers with tangible evidence of effective governance to present to constituents. Additionally, successful entrepreneurial ventures generate tax revenues, which can be used to fund government programs and services. Entrepreneurs may also support politicians—whether through endorsements, campaign contributions, or other means—when they perceive their policy agendas

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as favorable to entrepreneurial success. These factors collectively make fostering entrepreneurship an attractive priority for policymakers. While policymakers have strong incentives to support entrepreneurship through policy initiatives, a long-standing debate persists about the government's role in fostering entrepreneurship. This debate revolves around two competing policy approaches: (1) laissez-faire, which emphasizes minimal government involvement to support market processes, and (2) interventionist, which advocates for active government support and regulation to address so-called market failures that hinder entrepreneurship.

The roots of this debate can be traced back to the seminal work of political economists such as Adam Smith (1776), Joseph Schumpeter (1934, 1942), Ludwig von Mises (1998), and Milton Friedman (1962), who emphasized the role of free-market forces in fostering entrepreneurial dynamism. These scholars highlighted how market mechanisms enable entrepreneurs to identify business opportunities and direct resources to their highest valued use, spurring innovation and facilitating economic growth. Schumpeter (1942), in particular, celebrated the role of entrepreneurs as agents of "creative destruction," driving progress by displacing outdated technologies, processes, and business models. Such market forces are supported by a set of institutions and policies consistent with the principles of economic freedom (Bennett and Nikolaev 2019), including "personal choice, voluntary exchange, freedom to compete, and protection of persons and property" (Gwartney and Lawson 2003: 406).

Despite these foundational ideas, contemporary policy has increasingly shifted toward interventionist approaches, gaining intellectual support from scholars like Mariana Mazzucato (2013) and Joseph Stiglitz (2014), who argue that government intervention is essential to address market failures and foster innovation, particularly in high-risk, knowledge-intensive sectors where private investment may fall short. Earlier works laid the economic foundation for interventionist arguments. John Maynard Keynes (1936) underscored the government's role in stabilizing economies and stimulating investment during downturns, while Paul Samuelson (1947) developed formal economic models justifying government action in cases involving public goods and externalities. Contemporary entrepreneurship policies often provide financing to startups, assuming markets underfund these risky ventures relative to socially optimal levels.

These diverging approaches underscore a fundamental contrast in entrepreneurship policy. Laissez-faire advocates favor bottom-up solutions, emphasizing market-driven innovation led by individual initiative and minimal government

interference. In contrast, interventionists support top-down strategies, highlighting the importance of active state involvement to foster entrepreneurship and innovation (Colombo et al. 2019). Despite these theoretical differences, both perspectives converge on a shared recognition of entrepreneurship as a crucial driver of socio-economic development. Both approaches view entrepreneurship as central to enhancing the wealth of nations through innovation, job creation, and sustained socio-economic progress. However, they differ significantly in their theoretical assumptions about markets, the role of government, and the mechanisms of resource allocation. As such, they offer contrasting policy solutions to facilitate entrepreneurship and the wealth of nations.

In this paper, I examine these two approaches to entrepreneurship policy, outlining their theoretical foundations and providing a concise summary of the empirical evidence supporting each. As part of this assessment, I draw on Baumol's (1990) framework of productive and unproductive entrepreneurship as a lens to evaluate how different policy approaches influence the allocation of entrepreneurial effort and the implication for socioeconomic development. Empirical evidence suggests that the laissez-faire approach to entrepreneurship policy, characterized by higher levels of economic freedom, is a significant driver of productive entrepreneurial activity and innovation across countries and regions (Bennett and Nikolaev 2019). In contrast, the evidence on the efficacy of interventionist entrepreneurial finance schemes is more nuanced (Dvouletý et al. 2021). While such policies have been associated with productive outcomes, including increased innovation and follow-on private investment in specific contexts, they have also been linked to unproductive outcomes, such as crowding out private investment and fostering subsidy-dependent entrepreneurship in others (Lerner 2009). These findings suggest that effective entrepreneurship policy requires a careful balance between fostering economic freedom and selectively addressing market gaps to maximize productive entrepreneurship while minimizing distortions that encourage unproductive entrepreneurship.

2. Baumol's Productive and Unproductive Entrepreneurship Framework

Baumol's (1990) productive and unproductive entrepreneurship framework provides a valuable lens for understanding how policy environments shape entrepreneurial activity and their implications for the wealth of nations. According

to this framework, the institutional environment determines the allocation of entrepreneurial effort by influencing the relative incentives for different types of activities. In productive environments, entrepreneurs engage in innovation and value creation, generating societal benefits such as economic growth and improved living standards. Conversely, unproductive environments incentivize activities like rent-seeking or organized crime, which primarily reallocate resources without creating societal value. This framework underscores the importance of institutional and policy design in channeling entrepreneurial effort toward productive entrepreneurial outcomes that enhance the wealth of nations. I will use this framework to evaluate the efficacy of laissez-faire and interventionist approaches to entrepreneurship.

3. Interventionist Entrepreneurship Policy

Interventionist entrepreneurship policies are rooted in the theoretical justification that market failures, such as funding gaps for innovative startups, hinder the development of technologies and industries with transformative potential. These failures often arise from uncertainty and informational asymmetries that deter private-sector investment in high-risk ventures (Colombo et al. 2016; Lerner 2002). Without public intervention, the result is suboptimal investment in innovations that could drive economic growth, job creation, and national competitiveness (Lerner 2010). Governments, therefore, step in to correct these inefficiencies by providing financial support through mechanisms such as government venture capital (GVC) funds and innovation research grants. By strategically targeting resources, policymakers aim not only to fill existing gaps but also to influence the trajectory of technological change. As Mazzucato (2013) argues, the entrepreneurial state can actively shape emerging markets and lay the groundwork for decades of economic progress by investing in high-potential sectors and technologies.

While such interventions hold the promise of fostering productive entrepreneurship in theory, they are not without limitations in practice. Baumol's (1990) framework highlights the critical role of institutions and policies in channeling entrepreneurial effort. Poorly designed policies risk misallocating resources, fostering dependency, or incentivizing rent-seeking behaviors rather than innovation. Effective intervention requires careful alignment between public objectives and market mechanisms to ensure that entrepreneurial activity is

directed toward productive value creation rather than unproductive outcomes. These dual possibilities underscore the importance of evaluating the design and implementation of interventionist policies to maximize their positive impact while mitigating potential distortions. These dynamics are influenced by the political economy context, where policymakers face their own incentives and constraints, shaping outcomes that may diverge from the intended goals (Karlson et al. 2021).

3.1 Fostering Innovation and Market Entry

Evidence demonstrates that interventionist policies can play a critical role in fostering productive entrepreneurship, particularly in sectors where private investors are hesitant to engage. Programs like the Small Business Innovation Research (SBIR) program in the U.S. have been associated with significant innovation outcomes, including increased patenting activity. Patents, a widely recognized measure of innovative output, highlight the role of such policies in addressing funding gaps for high-risk ventures (Howell 2017; Lerner 2002). Patents represent a form of productive entrepreneurship because they often signal the creation of novel, value-generating technologies with potential for commercialization and broader societal benefits. For instance, Qian and Haynes (2014) find that SBIR funding supports not only technological innovation but also the formation of new high-tech firms, demonstrating the program's role in fostering entrepreneurship in knowledge-intensive sectors. These innovation and firm creation outcomes align with Baumol's concept of productive entrepreneurship, as they reflect entrepreneurial effort directed toward innovation, market creation, and societal benefit.

3.2 Mixed Evidence: Balancing Investment Crowd-In vs. Crowd-Out

While government funding can catalyze private investment, the evidence also reveals risks of crowding out private capital. For example, Wallsten (2000) find that SBIR grants often displace firm-financed R&D dollar for dollar, suggesting that public funding can substitute for private investment rather than complement it. Similarly, Cumming and MacIntosh (2006) provide evidence that GVC programs sometimes reduce private venture capital participation, particularly when public funds dominate the early-stage investment landscape.

At the same time, well-designed programs can crowd in private investment by

reducing risk perceptions and providing quality signals to the market. The certification role of government funding illustrates this potential. Studies by Brander et al. (2015) and Guerini and Quas (2016) demonstrate that GVC-backed firms are more likely to attract follow-on private investment, amplifying the impact of public funding. Howell (2017) similarly finds that SBIR funding acts as a quality signal, encouraging private venture capital participation. However, this certification role may exhibit diminishing returns. Lanahan and Armanios (2018) demonstrate that firms receiving multiple rounds of SBIR funding are less likely to receive private investment, reflecting a potential overreliance on public support.

Baumol's framework provides a lens for understanding these dynamics. Effective programs incentivize productive entrepreneurship by reducing barriers to innovation and enhancing market efficiency. However, when poorly executed, they risk distorting market dynamics, redirecting entrepreneurial effort toward rent-seeking or dependency on public funds.

3.3 Employment Effects: Short-Term Gains vs. Long-Run Challenges

Employment creation is often a politically salient objective of interventionist policies, even when not explicitly stated. Programs like GVCs and grants are frequently promoted as job creators, providing policymakers with tangible metrics to justify public spending. Evidence on employment effects, however, is mixed. While some studies suggest short-term gains, longer-term outcomes are less encouraging. For instance, Link and Scott (2012) found that SBIR-funded firms retained more employees during the funding period, particularly in knowledge-intensive sectors. In contrast, Lanahan et al. (2021) report that federal R&D subsidies are associated with lower net job creation compared to nonrecipients, as firms prioritize innovation and external collaboration over workforce expansion. Qian and Haynes (2014) similarly emphasize that while SBIR promotes high-tech firm formation, its influence on job creation may be more indirect, with employment effects varying by firm characteristics and regional conditions. These findings illustrate the trade-offs in policy design, where efforts to stimulate innovation may conflict with broader employment objectives.

3.4 Subsidy Entrepreneurship: Propping Up Unproductive Firms

Another critical concern in interventionist policies is the phenomenon of subsidy entrepreneurship, where firms focus on securing public funding rather than pursuing market-driven growth. Alperovych et al. (2015) provide compelling evidence from Belgium that GVC-backed firms are less productive than their private venture capital-backed counterparts, with public funding often sustaining low-performing firms that would otherwise fail in competitive markets. Similarly, Gustafsson et al. (2020) highlight how subsidy entrepreneurs channel their efforts into obtaining grants rather than creating value, misallocating resources and dampening long-term economic productivity. These findings align with Baumol's (1990) concept of unproductive entrepreneurship, illustrating how poorly designed policies can redirect entrepreneurial effort away from innovation and value creation toward rent-seeking behaviors.

3.5 Striking a Careful Balance

An assessment of the empirical evidence suggests that interventionist entrepreneurship policies can generate benefits by addressing market failures, fostering innovation, and catalyzing high-tech firm creation. However, their effectiveness is highly contingent on program design and implementation (Cumming 2007; Lerner 2002). Evidence highlights a delicate balance: while well-crafted programs can crowd in private investment and spur productive entrepreneurship, poorly designed initiatives risk crowding out private capital, sustaining unproductive firms, or incentivizing rent-seeking behaviors. Employment effects further illustrate this complexity, with short-term job gains often offset by longer-term inefficiencies. These outcomes underscore the importance of aligning policy objectives with market mechanisms, carefully evaluating interventions through Baumol's framework to ensure entrepreneurial effort is directed toward societal value creation rather than distortionary, unproductive activities that simply reallocate resources to politically favored firms (Klein et al. 2022).

4. Laissez Faire Entrepreneurship Policy

Rather than actively intervening in the market process to induce entrepreneurship, the laissez-faire perspective emphasizes the government's passive role in fostering entrepreneurship. This role is limited to establishing and maintaining institutions and policies aligned with the principles of economic freedom: "personal choice, voluntary exchange, freedom to compete, and protection of person and property" (Gwartney and Lawson 2003: 406). Economic freedom aligns with the concept of limited government, where resources are primarily allocated through markets rather than political processes, and politicians and bureaucrats face constraints on discretionary interventions that create distortions or favor particular firms (Holcombe 2013; Klein et al. 2022). This institutional design reduces incentives for entrepreneurs to engage in unproductive activities, such as rent-seeking, which merely reallocates resources without generating value (Sobel 2008).

Instead, the government's indirect role in fostering productive entrepreneurship lies in reducing uncertainty, lowering transaction costs, and eliminating politically erected barriers to competition. This is achieved through several mechanisms. For example, economic freedom entails protecting private property from confiscation or theft and enforcing contracts predictably and impartially through the rule of law. These institutions reduce institutional uncertainty and transaction costs (Bennett et al. 2023), facilitating entrepreneurs' ability to combine and deploy resources in pursuit of profit under conditions of uncertainty (Bjørnskov and Foss 2013).

Economic freedom also limits government interventions—such as regulation, taxation, and trade restrictions—that distort entrepreneurial decision-making and create an uneven playing field for firms. By minimizing these interventions, economic freedom allows individuals to use their time, talents, and resources to create new ventures and exploit entrepreneurial opportunities (Bennett 2021a). Furthermore, economic freedom restricts the government from competing directly in markets through state-owned enterprises, whose soft budget constraints stifle competition and discourage private sector entrepreneurship (Bjørnskov and Foss 2008). By supporting the market process of creative destruction, economic freedom also ensures that entrepreneurs are held accountable for failure, as losses provide critical feedback that incentivizes innovation and resource efficiency (Bennett 2021a).

In countries with more economic freedom, individuals are also more likely to prefer entrepreneurship as a career path, driven by a secure institutional environment and reduced barriers to starting and growing a business (Gohmann 2012). This highlights the broad appeal of economic freedom in fostering entrepreneurial intent (Junaid et al., 2022), a precursor to venture creation and innovation. Indeed, a growing body of research suggests that economic freedom is linked to various indicators of productive entrepreneurship such as new venture creation, formal entrepreneurship, venture growth, and innovation (Bennett et al. In Press; Bennett and Nikolaev 2019). Some of this evidence is summarized below, with a focus on studies that employ a composite indicator of economic freedom in the empirical analysis.

4.1 New Venture Creation

New venture creation refers to the process of establishing new business enterprises, often driven by perceived market opportunities. Opportunity-motivated entrepreneurship (OME) is often associated with innovation and value creation—hallmarks of productive entrepreneurship. Conversely, necessity-motivated entrepreneurship (NME) arises when individuals start businesses due to a lack of better employment options. While NME contributes to economic activity, it is less aligned with productive entrepreneurship, as these ventures often lack innovation potential and seldom create jobs for others. Several cross-national studies find that economic freedom is linked to higher levels of OME and lower levels of NME, suggesting that economic freedom channels entrepreneurial effort toward more productive uses (Angulo-Guerrero et al. 2017; Nikolaev et al. 2018). However, Núñez and Morales-Alonso (2024) provide evidence that the effects of economic freedom on OME and NME may be contingent on broader economic conditions.

4.2 Formal vs. Informal Entrepreneurship

Formal entrepreneurship refers to business activities conducted within the legal framework of a country, contributing to societal value through taxation, regulation, and legal accountability. Informal entrepreneurship, on the other hand, operates outside the legal framework, often due to high institutional barriers, and may align with unproductive entrepreneurship, depending on its

societal impact (e.g., organized crime) (Webb et al. 2020). Several studies find that economic freedom fosters formal entrepreneurship by reducing the costs and barriers associated with legal compliance, while simultaneously reducing informal entrepreneurship by increasing the benefits of operating in the formal economy (Dau and Cuervo-Cazurra 2014; Saunoris and Sajny 2017). These findings suggest that economic freedom enhances the allocation of entrepreneurial effort toward formal, value-creating activities, aligning with Baumol's (1990) productive entrepreneurship concept.

4.3 Entrepreneurial Dynamism

Entrepreneurial dynamism refers to the ongoing market process of firm churning across industries and regions, characterized by the creation of new firms and destruction of existing ones. This process reflects the market selection mechanism that reallocates resources from less to more productive uses (Decker et al. 2014), encouraging competition and facilitating innovation (Decker et al. 2017). As such, greater entrepreneurial dynamism reflects productive entrepreneurship, as it promotes the efficient reallocation of resources toward higher-value uses. Several subnational studies in the context of the U.S. link regional economic freedom to high levels of entrepreneurial dynamism. Bennett (2021a), for example, finds that economic freedom increases firm entry rates in U.S. cities but does not affect firm exit rates. Similarly, Campbell et al. (2012) report that state-level economic freedom has no effect on the firm exit rate –a result they attribute to heterogenous effects by the economic freedom index's components (see also Bennett 2021b). Bologna (2014) further demonstrates that economic freedom enhances firm entry rates at the city level, with positive spillover effects on neighboring regions. Moreover, Barnatchez and Lester (2017) document the long-term impact of economic freedom on net establishment creation rates (see also Sweidan, 2022). These findings collectively suggest that economic freedom fosters entrepreneurial dynamism by lowering barriers to entry, encouraging new venture creation, and creating a stable institutional environment that facilitates productive market selection processes without disproportionately affecting firm exit rates.

4.4 Venture Growth

Venture growth reflects the expansion and scalability of entrepreneurial firms, reflecting productive entrepreneurship when it generates jobs, innovation, and broader economic benefits (Araki et al. 2024). Research suggests that economic freedom plays an important role in facilitating venture growth by lowering institutional barriers to growth. For instance, Felzensztein et al. (2022) find that economic freedom reduces regulatory constraints and institutional inefficiencies, enabling firms to expand internationally. Saeedikiya et al. (2021) reveal that the relationship between innovation and growth aspirations among early-stage entrepreneurs is significantly strengthened in countries with high levels of economic freedom, suggesting that economic freedom amplifies the productive potential of innovative ventures. Additionally, Fuentelsaz et al. (2020) find that economic freedom moderates the relationship between high-growth aspiration entrepreneurship and exit rates. While high-growth aspiration entrepreneurship is generally associated with increased exit rates, higher levels of economic freedom mitigate this effect by creating a supportive institutional environment that allows ambitious ventures to survive and thrive. These results reinforce the earlier discussion on entrepreneurial dynamism, illustrating how economic freedom fosters productive entrepreneurship by enabling the survival of promising ventures amidst competitive market dynamics.

At the subnational level, Bennett et al. (2024) highlight how local economic freedom complements broader labor market reforms to promote high-growth entrepreneurship, even in heavily regulated industries. Similarly, Lucas and Boudreaux (2020) find that economic freedom enhances job creation, particularly for young firms, by offsetting the adverse effects of restrictive federal regulations. These studies illustrate the importance of adopting a laissez-faire approach at both regional and national levels to foster venture growth. While interventionist policies such as regulation at the federal level can create barriers that hinder entrepreneurial expansion, localized economic freedom policies provide the institutional flexibility needed to support young and ambitious firms. This interplay suggests that entrepreneurial growth is not solely a product of national-level policies but also of regional policy environments that encourage entrepreneurial venture growth.

4.5 Innovation

Innovation, often measured through metrics like patents and R&D intensity, reflects high-value entrepreneurial activity that aligns closely with the notion of productive entrepreneurship. Innovative ventures create societal value by introducing new products, services, and technologies that improve efficiency and enhance living standards. Research shows that economic freedom fosters innovation. Wagner and Bologna Pavlik (2020), for example, find that economic freedom increases patent activity and reduces patent concentration, promoting competitive innovation. Additionally, several studies illustrate the role of economic freedom in fostering corporate entrepreneurship. Zhu and Zhu (2017) demonstrate that corporate innovation is higher in countries with greater economic freedom, and Ilyas et al. (2023) demonstrate that economic freedom amplifies the positive effects of business model innovation on firm performance. Furthermore, Bennett and Nikolaev (2019) provide evidence that countries with higher levels of economic freedom generate more innovation output, while Bennett and Nikolaev (2021) show that the positive relationship between economic freedom and innovation is amplified by cultural individualism. These findings reflect the importance of economic freedom in creating an institutional environment conducive to innovative entrepreneurship, driving technological progress and societal value creation.

4.6 Economic Freedom as a Catalyst for Productive Entrepreneurship

Empirical evidence underscores the centrality of economic freedom in fostering productive entrepreneurship across its various dimensions, including new venture creation, formal entrepreneurship, entrepreneurial dynamism, venture growth, and innovation. By reducing institutional barriers, promoting fair competition, and enhancing the stability of market mechanisms, economic freedom channels entrepreneurial effort and resources toward productive activities that drive societal progress. These findings highlight the importance of a laissez-faire approach to entrepreneurship policy, suggesting that limiting government intervention in the economy while maintaining market-supporting institutions allows entrepreneurship to flourish in ways that align with Baumol's (1990) framework of productive entrepreneurship.

5. Conclusion

Entrepreneurship is widely recognized as a cornerstone of economic development. Thus, it is no surprise that fostering entrepreneurship has become a key priority for policymakers around the world. Public policy approaches to entrepreneurship can be broadly categorized into two distinct paradigms, as summarized in Table 1. First is the laissez faire approach, which relies on minimal government intervention to let market forces guide entrepreneurial activity. Second is the interventionist approach, which advocates for active state involvement to address perceived market failures that hinder entrepreneurship. In this paper, I examined both perspectives through the lens of Baumol's (1990) framework of productive and unproductive entrepreneurship, considering both the theoretical assumptions and empirical evidence related to both.

Table 1: Entrepreneurship Policy Paradigms

	Interventionist Entrepreneurship Policy	**Laissez Faire Entrepreneurship Policy**
Assumption about Markets	**Market Failure** Private markets underinvest in innovative entrepreneurial ventures	**Entrepreneurial Solutions** Entrepreneurs identify business opportunities that solve problems and create societal value
Government Role	**Corrective Device** Policymakers identify failures and design corrective policies	**Institutional Framework** Market-supporting institutions minimize transaction costs, provide entrepreneurs freedom to enter and compete in markets
Resource Allocation	**Strategic Government Investment** Policymakers strategically allocate resources to entrepreneurs and sectors with high social returns	**Invisible Hand** Entrepreneurs identify opportunities and direct resources to their highest value use

The laissez-faire approach, characterized by high levels of economic freedom, emerges as a robust driver of productive entrepreneurship. By reducing institutional barriers, ensuring fair competition, and fostering a stable environment for market processes, economic freedom channels entrepreneurial effort toward value-creating activities such as new venture creation, formal entrepreneurship,

venture growth, and innovation. The collective evidence strongly suggests that economic freedom allows entrepreneurship to thrive in ways that align with societal progress.

In contrast, interventionist approaches, while theoretically aimed at addressing market failures, often face significant practical challenges. Public choice theory reveals that policymakers operate under constraints and incentives that may diverge from economic efficiency. Political priorities such as visible job creation or grant disbursement metrics can lead to unintended consequences, including subsidy entrepreneurship, resource misallocation, and rent-seeking behaviors. These dynamics highlight the inherent difficulties of identifying and addressing market failures without introducing government failures of their own. The inability of government officials to "pick winners" in uncertain entrepreneurial contexts further complicates the success of such programs, as evidenced by crowding-out effects and the long-term inefficiencies of subsidy-dependent firms.

Baumol's framework, complemented by insights from public choice theory (Gwartney and Holcombe 2014; Holcombe 2016), underscores the importance of institutional alignment in fostering productive entrepreneurship. Policies that minimize distortions, reduce transaction costs, and support market-driven processes create an environment where entrepreneurial efforts are directed toward innovation, value creation, and societal benefits. Conversely, poorly designed interventions can redirect entrepreneurial energy into unproductive or rent-seeking activities, resulting in cronyism that rewards politically favored firms and undermines the potential of entrepreneurship as a driver of socio-economic progress (Klein et al. 2022).

Looking forward, the findings presented here suggest that entrepreneurship policy should prioritize economic freedom while remaining cautious about the unintended consequences of interventionist programs. Selective interventions may be justified in specific contexts where market failures are evident and clearly defined. However, such policies must be carefully designed to align with market mechanisms and avoid creating perverse incentives that encourage unproductive entrepreneurship. By adopting a balanced approach that emphasizes economic freedom as the foundation for entrepreneurship policy, policymakers can maximize the benefits of productive entrepreneurship while minimizing the risks of distortionary outcomes that encourage unproductive entrepreneurship, thereby advancing the wealth of nations.

References

Alperovych, Y., G. Hübner, and F. Lobet. 2015. "How does governmental versus private venture capital backing affect a firm's efficiency? Evidence from Belgium." *Journal of Business Venturing* 30: 508–525.

Angulo-Guerrero, M. J., S. Pérez-Moreno, and I. M. Abad-Guerrero. 2017. "How economic freedom affects opportunity and necessity entrepreneurship in the OECD countries." *Journal of Business Research* 73: 30–37.

Araki, M. E., D. L. Bennett and G. A.Wagner. 2024. "Regional innovation networks and high-growth entrepreneurship." *Research Policy* 53(1).

Armour, J., and D. Cumming. 2006. "The legislative road to Silicon Valley." *Oxford Economic Papers* 58(4): 596–635.

Audretsch, D. B., M. C. Keilbach, and E. E. Lehmann, E. E. 2006. *Entrepreneurship and economic growth*. Oxford University Press.

Audretsch, D. B., A. N. Link, and J. T. Scott. 2002. "Public/private technology partnerships: Evaluating SBIR-supported research." *Research Policy 31*(1): 145–158.

Barnatchez, K. and R. Lester. 2017. "The Relationship between economic freedom and economic dynamism." *Contemporary Economic Policy 35*: 358–372.

Baumol, W. J. 1990. "Entrepreneurship: Productive, unproductive, and destructive." *Journal of Political Economy 98:* 893–921.

Bennett, D. L. 2021a. "Local economic freedom and creative destruction in America." *Small Business Economics 56*(1): 333–353.

Bennett, D. L. 2021b. "Local institutional heterogeneity and firm dynamism: Decomposing the metropolitan economic freedom index." *Small Business Economics 57*(1): 493–511.

Bennett, D. L., C. Boudreaux, and B. Nikolaev. 2023. "Populist discourse and entrepreneurship: The role of political ideology and institutions." *Journal of International Business Studies 54*(1): 151–181.

Bennett, D. L. and B. Nikolaev. 2019. Economic freedom, public policy, and entrepreneurship. In J. Gwartney, R. Lawson, J. Hall, and R. Murphy (Eds.), *Economic freedom of the world: 2019 edition* (pp. 199–224). Fraser Institute.

Bennett, D. L. and B. Nikolaev. 2021. "Individualism, pro-market institutions, and national innovation." *Small Business Economics 57*:2085–2106.

Bennett, D. L., S. Vedula, and M. E. Araki (In Press). "Different strokes for different folks: A configurational analysis of entrepreneurial ecosystems." *Small Business Economics*.

Bennett, D. L., G. Wagner, and M. Araki. 2024. "Labor market reform as an external enabler of high-growth entrepreneurship: A multi-level institutional

contingency perspective." *Journal of Business Venturing 39*(6), 106428.

Bjørnskov, C. and N. J. Foss. 2008. "Economic freedom and entrepreneurial activity: Some cross-country evidence." *Public Choice 134*(3–4):307–328.

Bjørnskov, C. and N. J. Foss. 2013. "How strategic entrepreneurship and the institutional context drive economic growth." *Strategic Entrepreneurship Journal 7*(1): 50–69.

Block, J. H., M. G. Colombo, D. Cumming, and S. Vismara. 2018. "New players in entrepreneurial finance and why they are there." *Small Business Economics 50*(2): 239–250.

Bologna, J. 2014. "A spatial analysis of entrepreneurship and institutional quality: Evidence from U.S. metropolitan areas." *Journal of Regional Analysis and Policy 44*(2):109–131.

Brander, J., Q. Du, and T. Hellmann. 2015. "The effects of government-sponsored venture capital: international evidence." *Review of Finance 19*(2): 571–618.

Campbell, N., K. C. Heriot, A. Jauregui, and D. T. Mitchell. 2012. "Which state policies lead to U.S. firm exits? analysis with the economic freedom index." *Journal of Small Business Management 50*: 87–104.

Clayton, P., M. Feldman, and N. Lowe. 2018. "Behind the Scenes: Intermediary organizations that facilitate science commercialization through entrepreneurship." *Academy of Management Perspectives 32*(1): 104–124.

Colombo, M. G., D. J. Cumming, and S. Vismara. 2016. "Governmental venture capital for innovative young firms." *Journal of Technology Transfer 41*: 10–24.

Colombo, M. G., G. B. Dagnino, E. E. Lehmann, and M. Salmador. 2019. "The governance of entrepreneurial ecosystems." *Small Business Economics 52*(2): 419–428.

Cumming, D. 2007. "Government policy towards entrepreneurial finance: Innovation investment funds." *Journal of Business Venturing 22*: 193–235.

Cumming, D., L. Grilli, and S. Murtinu. 2017. "Governmental and independent venture capital investments in Europe: A firm-level performance analysis." *Journal of Corporate Finance 42*: 439–459.

Cumming, D., and S. Johan. 2009. "Pre-seed government venture capital funds." *Journal of International Entrepreneurship 7*(1): 26–56.

Cumming, D., S. Johan, and Y. Zhang. 2018. "Public policy towards Entrepreneurial finance: Spillovers and the scale-up gap." *Oxford Review of Economic Policy 34*(4): 652–675.

Cumming, D. and J. G. MacIntosh. 2006. "Crowding out private equity: Canadian evidence." *Journal of Business Venturing 21*: 569–609.

Dau, L. A. and A. Cuervo-Cazurra. 2014. "To formalize or not to formalize: Entrepreneurship and pro-market institutions." *Journal of Business Venturing 29*: 668–686.

Decker, R., J. Haltiwanger, R. Jarmin, and J. Miranda. 2014. "The role of entrepreneurship in US job creation and economic dynamism." *Journal of Economic Perspectives 28*: 3–24.

Decker, R., J. Haltiwanger, R. S. Jarmin, and J. Miranda. 2017. "Declining dynamism, allocative efficiency, and the productivity slowdown." *American Economic Review 107*(5): 322–326.

Dvouletý, O., S. Srhoj, and S. Pantea. 2021. "Public SME grants and firm performance in European Union: A systematic review of empirical evidence." *Small Business Economics 57*(1): 243–263.

Felzensztein, C., G. Saridakis, B. Idris, and G. P. Elizondo. 2022. "Do economic freedom, business experience, and firm size affect internationalization speed? Evidence from small firms in Chile, Colombia, and Peru." *Journal of International Entrepreneurship 20*(1): 115–156.

Foss, N. J., P. G. Klein, and C. Bjørnskov. 2019. "The context of entrepreneurial judgment: Organizations, markets, and institutions." *Journal of Management Studies 56*(6): 1197–1213.

Foss, N. J., P. G. Klein, and S. Murtinu. 2022. "The economy doesn't need a reset, and neither does management theory." *Scandinavian Journal of Management 38*(3): 101214.

Friedman, M. 1962. *Capitalism and freedom*. Chicago: University of Chicago Press.

Fuentelsaz, L., C. González, and J. P. Maícas. 2020. "High-growth aspiration entrepreneurship and exit: The contingent role of market-supporting institutions." *Small Business Economics*.

Gohmann, S. F. 2012. "Institutions, latent entrepreneurship, and self-employment: An international comparison." *Entrepreneurship Theory and Practice 36*(2): 295–321.

Guerini, M. and A. Quas. 2016. "Governmental venture capital in Europe: Screening and certification." *Journal of Business Venturing 31*(2): 175–195.

Gustafsson, A., P. G. Tingvall, and D. Halvarsson. 2020. "Subsidy entrepreneurs: An inquiry into firms seeking public grants." *Journal of Industry, Competition and Trade 20*(3): 439–478.

Gwartney, J. and R. G. Holcombe. 2014." Politics as exchange: The classical liberal economics and politics of James M. Buchanan." *Constitutional Political Economy 25*(3): 265–279.

Gwartney, J. and R. Lawson. 2003. "The concept and measurement of economic freedom." *European Journal of Political Economy 19*: 405–430.

Holcombe, R. G. 2012. Make economics policy relevant: Depose the omniscient benevolent dictator. *The Independent Review*, *17*(2), 165–176.

Holcombe, R. G. 2013. "Crony capitalism: By-product of big government." *The Independent Review 17*(4): 541–559.

Holcombe, R. G. 2016. *Advanced introduction to public choice*. Edward Elgar Publishing.

Howell, S. T. 2017. "Financing innovation: Evidence from R&D grants." *American Economic Review 107*: 1136–1164.

Ilyas, I. M., N. Kammerlander, R. Turturea, and M. van Essen. 2023. "When business model innovation creates value for companies: A meta-analysis on institutional contingencies." *Journal of Management Studies*.

Junaid, D., Z. He, and F. Afzal. 2022. "The impact of weak formal institutions on the different phases of the entrepreneurial process." *Journal of Business Research 144*: 236–249.

Karlson, N., C. Sandström, and K. Wennberg. 2021. "Bureaucrats or markets in innovation policy? – A critique of the entrepreneurial state." *The Review of Austrian Economics 34*(1): 81–95.

Keynes, J. M. 1936. *The general theory of employment, interest and money*. Macmillan.

Klein, P. G., R. M. Holmes, Jr., N. J. Foss, S. Terjesen, and J. Pepe. 2022. "Capitalism, cronyism, and management scholarship: A call for clarity." *Academy of Management Perspectives 36*(1): 6–29.

Lanahan, L., and D. Armanios. 2018. "Does more certification always benefit a venture?" *Organization Science 29*(5): 931–947.

Lerner, J. 2000. "The government as venture capitalist: The long-run impact of the SBIR program." *The Journal of Private Equity 3*: 55–78.

Lerner, J. 2002. "When bureaucrats meet entrepreneurs: The design of effective 'public venture capital" programmes.' *The Economic Journal 112*: F73–F84.

Lerner, J. 2009. *Boulevard of broken dreams why public efforts to boost entrepreneurship and venture capital have failed—And what to do about it*. Princeton University Press.

Lerner, J. 2010. "The future of public efforts to boost entrepreneurship and venture capital." *Small Business Economics 35*: 255–264.

Link, A. N. and J. T. Scott. 2012. "Employment growth from the Small Business Innovation Research program." *Small Business Economics 39*: 265–287.

Lucas, D. S. and C. J. Boudreaux. 2020. "National regulation, state-level pol-

icy, and local job creation in the United States: A multilevel perspective." *Research Policy 49*(4).

Mazzucato, M. 2013. *The entrepreneurial state–debunking public vs. Private sector myths New York*. Anthem Press.

McCloskey, D. N. 2016. *Bourgeois Equality: How Ideas, Not Capital or Institutions, Enriched the World*. University of Chicago Press.

Nikolaev, B., C. J. Boudreaux, and L. Palich. 2018. "Cross-country determinants of early-stage necessity and opportunity-motivated entrepreneurship: Accounting for Model Uncertainty." *Journal of Small Business Management 56*(S1): 243–280.

Nordhaus, W. 2004. *Schumpeterian profits in the American economy: Theory and measurement* (w10433). National Bureau of Economic Research.

Núñez, Y. M. and G. Morales-Alonso. 2024. "Longitudinal study of necessity- and opportunity-based entrepreneurship upon COVID lockdowns—The importance of misery and economic freedom indexes." *Technological Forecasting and Social Change 200:* 123079.

Qian, H. and K. E. Haynes. 2014. "Beyond innovation: The Small Business Innovation Research program as entrepreneurship policy." *The Journal of Technology Transfer 39*(4): 524–543.

Saeedikiya, M., J. Li, S. Ashourizadeh, and S. Temiz. 2021. "Innovation affecting growth aspirations of early stage entrepreneurs: Culture and economic freedom matter." *Journal of Entrepreneurship in Emerging Economies 14*(1): 45–64.

Samuelson, P. 1947. *Foundations of Economic Analysis*. Harvard University Press.

Saunoris, J. W. and A. Sajny. 2017. "Entrepreneurship and economic freedom: Cross-country evidence from formal and informal sectors." *Entrepreneurship and Regional Development 29*(3–4): 292–316.

Schumpeter, J. A. 1934. *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle* (R. Opie, Trans.). Harvard University Press.

Schumpeter, J. A. 1942. *Capitalism, socialism, and democracy*. Harper.

Smith, A. 1776. *An inquiry into the nature and causes of the wealth of nations* (Edwin Cannan, Ed.). Library of Economics and Liberty.

Sobel, R. S. 2008. "Testing Baumol: Institutional quality and the productivity of entrepreneurship." *Journal of Business Venturing 23*: 641–655.

Stiglitz, J. E., B. Greenwald, P. Aghion, K. Arrow, R. Solow, and M. Woodford. 2014. *Creating a learning society: a new approach to growth, development, and social progress*. Columbia University Press.

Sweidan, O. D. 2022. "Economic freedom and entrepreneurship rate: Evidence from the US States after the great recession." *Journal of the Knowledge Economy 13*(1): 111–127.

Tullock, G. 1967. "The welfare costs of tariffs, monopolies, and tariffs." *Economic Inquiry 5*(3): 224–232.

Von Mises, L. 1998. *Human action: A treatise on economics* (Scholar's ed.). Ludwig Von Mises Institute.

Wagner, G. A. and J. Bologna Pavlik. 2020. "Patent intensity and concentration: The effect of institutional quality on MSA patent activity." *Papers in Regional Science 99*(4): 857–898.

Wallsten, S. J. 2000. "The effects of government-industry R&D programs on private R&D: The case of the Small Business Innovation Research Program." *RAND Journal of Economics 31*: 82–100.

Webb, J. W., T. A. Khoury, and M. A. Hitt. 2020. "The influence of formal and informal institutional voids on entrepreneurship." *Entrepreneurship Theory and Practice 44*(3): 504–526.

Zhu, H. and S. X. Zhu. 2017. "Corporate innovation and economic freedom: Cross-country comparisons." *The Quarterly Review of Economics and Finance 63*: 50–65.

Eco-Entrepreneurship and (Unintended?) Rent-Seeking

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1. Introduction

International agreements such as the Kyoto Protocol and the Paris Agreement have prompted governments to take action to reduce CO_2 emissions and limit global temperature rise to below 2°C, with a target of 1.5°C (UNFCCC 2015). Central to these efforts is the transition to clean energy. Entrepreneurs who act on opportunities to provide clean, or renewable energy, are an example of eco-entrepreneurship. According to Kotchen (2009), eco-entrepreneurship is entrepreneurial activity that generates profit while delivering environmental benefits. There are several characteristics of this market that make it especially challenging. To begin, the goods and services which eco-entrepreneurs provide often have "external benefits" which means that there will be (absent any intervention) an under-provision of the good or service. In addition, the timeline for reform is short, and in many cases, the technology may have high fixed costs that require the eco-entrepreneur to produce many units to make a profit. Further, in the case of clean energy, existing firms have a clear advantage.

While eco-entrepreneurs contribute to sustainability, their reliance on policy support (e.g. subsidies, tax-credits, etc.) creates opportunities for rent-seeking, where firms extract gains through political or regulatory channels rather than through productive innovation. Recent evidence from high-emission economies such as China and Japan suggests that eco-entrepreneurship and green technology investment can reduce emissions over time (Chen, Ren, and Ma 2024), yet these

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outcomes depend on the structure of incentives and market conditions.

This paper examines the dual role of eco-entrepreneurship as both a driver of sustainability and a potential vector for rent-seeking. Drawing on the Bootlegger, Baptist, and Political Entrepreneur framework developed by Simmons et al. (2011), we analyze case studies to explore how environmental advocacy and regulatory incentives can be strategically leveraged to shape market outcomes. This framework illustrates how seemingly opposing interests—those of environmental advocates (the Baptists) and those seeking profit from regulation or protectionism (the Bootleggers)—can align to shape market dynamics in ways that may not always lead to the intended positive outcomes. By investigating these interactions, this study provides a nuanced understanding of the conditions under which eco-entrepreneurship advances sustainability and when it may instead facilitate rent-seeking and regulatory capture.

This paper makes three core contributions. First, it develops a conceptual framework for distinguishing between productive and unproductive eco-entrepreneurial activity. Second, it provides empirical evidence—through comparative case studies of the United States, Spain, and Singapore—of how eco-entrepreneurial ecosystems can foster or constrain rent-seeking depending on institutional context. Third, it identifies policy instruments that mitigate rent-seeking while preserving incentives for innovation. By clarifying the institutional conditions under which eco-entrepreneurship serves the public good, or devolves into rent-seeking, this paper aims to inform both scholars of regulatory capitalism and policymakers designing green industrial strategies.

2. Theoretical and Empirical Foundations

2.1 Definitions of Eco-Entrepreneurship

Eco-entrepreneurship refers to a specific strand of entrepreneurship that combines environmental sustainability with commercial viability. It is grounded in the broader concept of sustainable development, defined by the Brundtland Report as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (1987: 41). Within this framework, eco-entrepreneurship emerges not just as an economic activity, but as a response to environmental challenges such as climate change, resource depletion, and pollution among others.

Though often used alongside terms like social entrepreneurship, circular entrepreneurship, and corporate social responsibility (CSR), eco-entrepreneurship has a more specific focus.[3] As Gunawan (2016) notes, its defining feature is the simultaneous pursuit of ecological benefit and profit. Table 1 synthesizes several influential definitions, illustrating how eco-entrepreneurship has evolved from a niche concept into a multidisciplinary field of inquiry that spans policy, innovation, and sustainability studies. Although some of these studies use other adjectives—"green" entrepreneurship (Urbaniec 2017) or "sustainable" entrepreneurship (Dean & McMullen 2007)—for our purposes, we are referring to them as "eco-entrepreneurship" because their definition is consistent with the behavior as we define it.

Table 1: Different definitions of Eco-Entrepreneurship

	Source	Definition
1.	Kotchen (2009)	"The practice of starting new businesses that are profitable and based on goods or services that are impure public goods with environmental benefits" (pg 28).
2.	Gutterman (2020)	"Being environmentally or ecologically embedded by preserving natural resources and creating economic development. Focus is on addressing environmental or ecological problems and issues" (pg 20).
3.	Dean & McMullen (2007)	"The process of discovering, evaluating, and exploiting economic opportunities that are present in environmentally relevant market failures" (pg 58).
4.	Urbaniec (2017)	"The growing interests of enterprises in expanding their businesses in line with environmental principles, taking into account both ecological and economic benefits" (pg 50).

3 Social entrepreneurship primarily addresses societal issues and may incorporate environmental aims, but these are often secondary or not central to their impact. Circular entrepreneurship focuses on minimizing waste and optimizing resource use through closed-loop systems. While it overlaps with eco-entrepreneurship in promoting sustainability, its emphasis lies more narrowly on material flows and product life cycles. Corporate Social Responsibility (CSR) typically reflects a reactive approach, in which established firms integrate environmental concerns into existing operations, rather than embedding ecological goals into the founding logic of the enterprise.

	Source	Definition
5.	Crals (2004)	"The continuing commitment by businesses to behave ethically and contribute to economic development while improving the quality of life of the workforce, their families, the local and global community, as well as future generations" (pg 1).
6.	Isaak (2002)	"An existential form of business behaviour committed to sustainability, characterized by the creation of 'green-green businesses' that are intentionally designed from inception to incorporate environmentally responsible processes and products, with the explicit goal of transforming their economic sector toward sustainable development" (pg 81-82).

Eco-entrepreneurship manifests across diverse sectors and geographies, emerging in both high-tech and low-tech contexts to address pressing environmental challenges. Across industries, eco-entrepreneurs respond to environmental degradation not only as a moral imperative but as a market opportunity—often where inefficiencies, externalities, and institutional voids prevail.

In the energy and transportation sector, Tesla exemplifies this dual-purpose innovation. The company has disrupted the automotive industry by mainstreaming electric vehicles (EVs), thereby reducing reliance on internal combustion engines that emit carbon dioxide—a greenhouse gas that contributes significantly to global warming by trapping heat in the atmosphere. Moreover, Tesla has catalyzed advancements in battery storage technology with broader applications in energy systems displacing incumbent fossil-fuel technologies with cleaner alternatives. Tesla, led by Elon Musk, is an embodiment of Schumpeter's (2003) notion of creative destruction.[4] Similarly, d.light operates within the renewable energy space, offering solar-powered solutions in off-grid regions of the Global South. By delivering clean, affordable energy to underserved populations, d.light reduces both energy poverty and carbon emissions, aligning environmental sustainability with developmental goals.

In the consumer goods and retail sectors—among the largest contributors to environmental degradation through resource extraction, emissions, and

4 Schumpeter's (2003) concept of creative destruction refers to the process by which innovation disrupts and replaces established industries, driving economic progress through the introduction of new technologies, products, or business models.

waste—eco-entrepreneurship manifests in diverse forms. Patagonia incorporates environmental ethics through recycled materials, product repair programs, and transparent supply chains. It embedded sustainability at the core of their business strategies.[5] Allbirds, another innovator in this space, produces carbon-neutral footwear from natural fibers (like wool, tree fiber, and sugarcane-based foams), minimizing the lifecycle footprint of its products.[6] These firms illustrate how environmental values can be structurally embedded within business models without sacrificing profitability. Packaging, a frequently overlooked contributor to landfill volume and plastic pollution, is another site of innovation. Ecovative Design uses mycelium (fungi)-based materials to replace petroleum-derived plastics, exemplifying a biomimetic approach to sustainable design.

These ventures support Kirzner's (2011) view of entrepreneurs as opportunity-spotters, identifying inefficiencies in the market and responding with solutions that deliver both economic and altruistic value. While traditional microeconomic models subsume "altruistic value" under consumer preferences, environmental degradation is more accurately framed as a systemic market failure. Air pollution, for instance, reflects a classic case of a negative externality: firms emit harmful substances like carbon dioxide without internalizing the social costs, largely due to the absence of enforceable property rights over clean air. Such failures are not isolated. They reflect broader "commons dilemmas," in which open-access resources—such as the atmosphere or fisheries—are overexploited because no actor bears the responsibility for their preservation—a pattern emblematic of the "tragedy of the commons."[7] Stavins (2011) underscores how the growth of global economies has strained the planet's carrying capacity and rendered traditional, community-based governance of commons inadequate at larger scales.

In these contexts, eco-entrepreneurs act as institutional gap-fillers, crafting

5 Look at Patagonia, Inc., "2023–2024 B Corp Report," accessed June 26, 2025, https://www.patagonia.com/on/demandware.static/-/Library-Sites-PatagoniaShared/default/dw2f8292a3/PDF-US/Patagonia-2023-2024-BCorp-Report.pdf.

6 Allbirds defines carbon neutrality through a three-pronged approach: measuring the full lifecycle emissions of its products, reducing its footprint through renewable materials (like wool, tree fiber, and sugarcane-based foams), and removing residual emissions through investments in nature-based carbon offset projects. The company's internal carbon tax funds these offsets, and it publicly reports progress through its "Flight Plan," which includes sourcing goals (e.g., regenerative wool, 100% renewable energy in its manufacturing partners) and environmental audit requirements for its suppliers. See: Allbirds Sustainability and "Flight Status" reports.

7 Garrett Hardin's "Tragedy of the Commons" illustrates that the pursuit of individual self-interest in a shared global system often leads to collective ruin.

market-based solutions where regulation lags or incentives are misaligned. Thus, eco-entrepreneurship operates at the intersection of innovation and institutional failure. It challenges the assumption that environmental degradation is merely a byproduct of economic activity, reframing it instead as a solvable design flaw. Yet these ventures cannot substitute for systemic reform. As Stavins notes, while economic theory provides tools for designing more efficient environmental policies, real-world implementation is often impeded by political, institutional, and informational barriers (ibid.: 102–103).

2.2 Policies that Support Entrepreneurship and Eco-Entrepreneurship

In general, entrepreneurship tends to flourish in market economies where institutions secure property rights, enforce the rule of law, and facilitate open market entry. Foundational supports such as enforceable contracts, access to finance, labor market flexibility, and transparent regulatory systems help entrepreneurs make long-term investments and manage risk. Research from the Economic Freedom of the World Index consistently shows that countries with stronger economic freedom—measured by low regulatory burdens, sound money, open trade, and fiscal discipline—exhibit higher rates of business formation and overall economic growth (Gwartney et al., 2023). Bennett (2021) reinforces this view with U.S. metropolitan-level data, finding that higher local economic freedom—characterized by secure property rights, limited government intervention, and open competition—is strongly associated with increased firm entry and job creation. Importantly, this effect does not come at the cost of higher firm or job destruction. Rather, economic freedom appears to act as an "external enabler," encouraging productive new ventures without prematurely displacing existing ones. These findings support the view that institutions shape entrepreneurial incentives by reducing transaction costs, barriers to entry, and uncertainty allowing entrepreneurs to experiment, innovate, and allocate resources efficiently (North 1990; Acs et al., 2017).

In addition to structural reforms, many governments deploy targeted tools to attract and retain entrepreneurs. These include startup grants, public venture funds, tax incentives, and government-supported incubators or accelerators. Immigration policies, such as startup or investor visas, have been adopted in countries like Canada, Estonia, and the Netherlands to bring in high-potential entrepre-

neurs. These start-up visa programs differ in structure, spanning self-employment visas to incubator-supported models, and are increasingly adopted by nations with strong entrepreneurial ecosystems to attract global talent competitively (see chapter 3 in this volume for more information about expatriate visas). In the U.S., while the EB-5 investor visa[8] has long been in place, new approaches such as the International Entrepreneur Rule (IER) allow founders to stay temporarily if their startup shows exceptional promise and investment. Public procurement initiatives and R&D tax credits are often used to reduce early-stage risk, while university-industry partnerships help foster local innovation ecosystems. These instruments aim to address market failures in financing, knowledge diffusion, and coordination, though their success depends on whether they complement rather than distort market signals (Shane 2009; Acs et al. 2016).

What policies promote eco-entrepreneurship? As described previously, many environmental harms—including resource depletion, pollution, and habitat loss—stem from classic market failures, most notably poorly defined or unenforced property rights. When polluters do not bear the full social cost of their actions, they externalize environmental damage onto others. Alternatively, establishing clear property rights, or implementing Pigouvian taxes and tradable permits[9], can compel actors to internalize external costs, reducing harmful activities, creating market space for sustainable alternatives, and incentivizing innovation and more efficient resource use.

Political economist Elinor Ostrom has shown how local communities often develop successful institutions to govern common-pool resources through shared rules, monitoring, and enforcement mechanisms. Her work challenges the inevitability of the so-called "tragedy of the commons" by demonstrating that institutional arrangements—rather than the commons themselves—determine out-

8 Investor visas differ significantly from start-up visas. For example, the U.S. EB-5 program requires substantial capital investment, whereas start-up visas emphasize innovation potential and job creation rather than upfront wealth.

9 A substantial body of work in game theory and environmental economics explores market-based approaches to managing common resources. See Stavins, Robert N., "The Problem of the Commons: Still Unsettled After 100 Years," American Economic Review 101, no. 1 (2011): 81–108, for an extensive discussion on managing common-pool resources in the absence of well-defined property rights. For a detailed treatment of Pigouvian taxes, which impose costs on polluters equivalent to the marginal external damage they cause and are widely advocated as a means of correcting resource misallocations caused by negative externalities, see Baumol, William J., "On Taxation and the Control of Externalities," American Economic Review 62, no. 3 (1972): 307–322. Baumol defends the theoretical soundness of Pigouvian taxation under conditions of perfect competition while acknowledging its practical limitations due to information constraints and implementation challenges.

comes (Ostrom 1990). For instance, Ostrom emphasizes that durable systems of resource governance require clarity of rights and responsibilities, mechanisms for conflict resolution, and nested enterprises for multi-level governance. A widely cited example is the U.S. Clean Air Act Amendments of 1990, which introduced a market-based cap-and-trade system for sulfur dioxide (SO_2). This program capped total emissions and allowed firms to buy and sell allowances—the "right to emit"—creating flexibility in compliance and reducing costs while meeting environmental goals.

While the internalization of environmental costs corrects one form of market failure, eco-entrepreneurship often suffers from another: the underproduction of goods with positive externalities. For instance, when an individual receives a flu vaccine, they enjoy private health benefits, but others benefit too from reduced transmission: an effect known as "herd immunity." Because these broader benefits are not reflected in private returns, vaccines tend to be under-consumed in unregulated markets. A similar logic applies to many green innovations. When a household installs solar panels, they reduce reliance on fossil fuels, lowering emissions and improving air quality for the broader community. Yet these collective benefits are not easily monetized by the individual adopter, creating a classic underinvestment problem in sustainability-enhancing technologies.

In addition to the difficulty of capturing the full social benefit of eco-entrepreneurial innovations, there are also challenges associated with the urgency of deploying new technologies. Green technologies, including renewable energy, biodegradable materials, and carbon capture, typically demand significant initial investment and extended periods to achieve financial returns. These ventures operate in markets that are frequently distorted by fossil fuel subsidies, infrastructure deficits, or entrenched path dependencies. In this context, government support mechanisms—such as feed-in tariffs, green procurement programs, and environmental standards—are not just helpful but often indispensable. For instance, the widespread adoption of solar and wind energy in Germany and Denmark was enabled by stable, long-term policy commitments that reduced investment risk. Similarly, in the U.S., programs like PACE (Property Assessed Clean Energy) and C-PACE (Commercial PACE) financing incentivize sustainability upgrades for residential and commercial buildings by linking repayment to property taxes, lowering the barrier to entry for green improvements.

Given these distinct characteristics, eco-entrepreneurship demands more than generic pro-business reforms; it requires a policy framework tailored to en-

vironmental objectives and the long-term public benefits they generate. This includes internalizing environmental costs through carbon pricing, subsidizing the use of products (e.g., tax benefit for buying EV in the U.S. or subsidies to farmers to dedicate land for conservation in the EU), and directing public investment toward sustainable technologies. Effective support also requires coordination across different levels of government to reduce uncertainty and ensure regulatory coherence. Because environmental harms often transcend borders, international cooperation is equally vital. The success of such policies hinges not only on their design but also on their implementation, enforcement, and safeguards against misuse. As the following section explores, the very policy tools meant to support eco-entrepreneurship may also invite rent-seeking behavior, especially in political environments where access to regulation becomes a source of economic advantage. Addressing these institutional risks is essential to ensure that environmental entrepreneurship remains a driver of innovation rather than a mechanism for extracting rents.

2.3 Rent-Seeking and Eco-Entrepreneurship

Entrepreneurship is a critical driver of economic growth, yet its effectiveness is influenced by the institutional and regulatory frameworks in which it operates. Baumol (1990) emphasizes that the "rules of the game"[10] shape whether entrepreneurial activity is productive, unproductive, or even destructive. In the context of eco-entrepreneurship, the allocation of entrepreneurial efforts between innovation and unproductive activities like rent-seeking can significantly impact environmental outcomes. Effective institutional frameworks are necessary to support productive entrepreneurship and mitigate rent-seeking behaviors, which can distort market dynamics.

Rent-seeking behavior, as defined by Buchanan (1980), refers to efforts that maximize individual value at the expense of social surplus. Krueger (1974) notes how rent-seeking can divert resources away from productive ventures, stifling innovation and hindering economic growth. In the context of eco-entrepreneurship, rent seeking can be particularly damaging as it misallocates resources that

10 These rules include laws, regulations, and norms that influence the incentives entrepreneurs face. See: William J. Baumol, "Entrepreneurship: Productive, Unproductive, and Destructive," Journal of Political Economy 98, no. 5 (1990): 893–921.

could otherwise be used to address environmental challenges. Lu (1992) further explores how firms may engage in rent-seeking without specializing in it, thereby diverting entrepreneurial resources away from productive uses. This misallocation of resources, as Baumol (1990) argues, impedes economic progress. In eco-entrepreneurship, rent-seeking behaviors can undermine efforts to tackle pressing environmental issues by redirecting resources away from sustainable innovations.

In practice, rent-seeking can take many forms. As Mitchell (2014) notes, firms expend resources on political gifts, campaign contributions, and extensive lobbying operations aimed at influencing regulation, securing subsidies, or excluding competitors through targeted laws or tax privileges. These expenditures, while privately rational, offer no social return and often exceed the value of the privileges obtained—a phenomenon known as "overdissipation" (ibid.: 19–20). For example, firms may seek "targeted tax relief" (e.g., tax credits for specific industries such as film production), exploit loopholes in subsidy programs (such as agriculture or clean energy), or secure noncompetitive government contracts (as seen with defense contractors like Lockheed or Halliburton). These actions consume vast resources that could otherwise fund innovation or R&D (ibid.: 10–14).

Recent research underscores the practical relevance of these concerns. Canh (2020) finds that access to abundant natural resources can incentivize firms to seek rents rather than innovate, particularly under weak institutional constraints. The risk is especially acute in the green economy, where well-intentioned policies—such as subsidies, clean energy mandates, or green certifications—can become targets for manipulation. When access to policymakers becomes a channel for economic gain, innovation and sustainability risk being sidelined in favor of influence.

The Bootleggers and Baptists framework offers a useful lens to better understand these dynamics. Originally proposed by Yandle (1983) and later expanded by Simmons et al. (2011), this theory from public choice economics explains how seemingly opposing interest groups may align to support the same regulation. "Baptists" are moral or public-interest advocates who promote regulation on ethical or social grounds—such as environmental NGOs lobbying for clean air laws. "Bootleggers," by contrast, are self-interested actors who stand to gain economically from the regulation, often at the expense of competitors. For example, a clean energy firm may support strict emissions standards that eliminate cheaper fossil-fuel competitors.

Simmons et al. (2011) extend the model by introducing the political entrepreneur: an actor—such as a legislator, regulator, or lobbyist—who facilitates

this coalition by aligning the goals of Baptists and Bootleggers. In the context of eco-entrepreneurship, this coalition can be both enabling and problematic. On one hand, it may accelerate regulatory support for sustainable innovation. On the other, it opens space for unproductive rent-seeking when the Bootlegger's interests dominate, and policies are shaped to serve narrow commercial gains rather than broader environmental goals.

The consequences of pervasive rent-seeking extend beyond the economic to the political and social fabric. Of the multiple harms Mitchell (2014) identifies, three are especially concerning: the loss of innovation and diminished long-run economic growth, the diminished legitimacy of both government and business, and the erosion of social trust. Mitchell warns that rent-seeking activities disproportionately benefit the wealthy and well-connected, reinforcing public perceptions of unfairness and corruption. These dynamics can "undermine the legitimacy of both the government and the private sector" and may contribute to broader societal cynicism and polarization (ibid.: 2 & 31). In the most troubling scenarios, this erosion of trust may even "threaten the foundation of democratic institutions" (ibid.: 26–27).

3. Research Methodology

This study employs a comparative case study approach to analyze the intersection of environmental advocacy and rent-seeking behavior within the context of eco-entrepreneurship. The Bootlegger and Baptist theory (Yandle 1983; Simmons et al. 2011) serves as the guiding framework, offering insight into how profit-driven actors ("Bootleggers") and public-interest advocates ("Baptists") align, whether deliberately or inadvertently, to promote regulations that further their distinct objectives. In the context of environmental policy, this framework highlights how green initiatives, while often grounded in moral or public-interest objectives, can be leveraged by eco-entrepreneurs to secure regulatory rents.

Case studies offer a methodologically appropriate tool to explore the institutional and political conditions under which rent-seeking emerges. This approach facilitates the identification of key actors—eco-entrepreneurs, advocacy coalitions, political intermediaries—and the mechanisms through which they influence environmental policy design and implementation. The selection of cases is purposive, aiming to capture variation across economic systems, regulatory capacity, and levels of corruption. The three cases selected are:

1. United States: A liberal market economy with relatively open capital markets and moderate regulatory oversight. The Solyndra case illustrates how green industrial policy can be distorted by lobbying and political access, raising concerns about the selective allocation of public resources.
2. Spain: A social market economy with strong state involvement in certain sectors. During the 2000s, Spain's generous feed-in tariffs for renewable energy prompted rapid investment but also led to unsustainable tariff deficits and market concentration. This case demonstrates how poorly designed subsidies can incentivize rent-seeking and speculative behavior.
3. Singapore: A state-led market economy known for high regulatory efficiency and strong rule of law. Despite its reputation for clean governance, Singapore's green sector is heavily influenced by state-linked enterprises, highlighting the potential for institutionalized rent extraction through non-competitive advantage rather than overt corruption.

Table 2: Institutional and Economic Characteristics of Case Study Countries

	Country	United States	Spain	Singapore
1	Economic Freedom of the World Score 2022 (Fraser Institute, 2024) *out of 10	8.09	7.54	8.55
2	Corruption Perceptions Index 2022 (Transparency International, 2024) *out of 100	65.0	56.0	84.0
3.	Global Innovation Index 2024 Score (WIPO, 2024) *out of 100	62.4	44.9	61.2
4	Environmental Performance Index 2024 Score (Yale, 2024) *out of 100	57.2	64.0	53.0
5	Human Development Index 2023 (UNDP, 2024) *out of 1	0.938	0.918	0.946

The inclusion of countries with relatively high scores on the above indices allows us to examine how rent-seeking persists even in ostensibly "well-governed" environments. This suggests that eco-entrepreneurial rent-seeking is not simply a function of weak institutions or high corruption but may arise from the structure of green industrial policy itself—especially when large subsidies, discretionary approvals, or closed procurement systems are involved.

These cases are not intended to be exhaustive but illustrative. By analyzing contrasting yet complementary examples, we demonstrate that rent-seeking in eco-entrepreneurship is a systemic risk—one that varies in form and intensity depending on institutional design, but not in frequency. The next section presents empirical patterns of rent-seeking behavior in the environmental sector across these and other contexts, using both qualitative evidence and sector level lobbying data.

4. Empirical Evidence of Rent-Seeking

Empirical research increasingly shows that rent-seeking remains a persistent feature of the political economy, especially in sectors tied to regulatory oversight. Melo and Neilson (2023), using a synthetic matching approach, quantify rent-seeking intensity across U.S. industries and states from 2004 to 2020. Their analysis reveals that traditional forms of rent-seeking—particularly in industries with close political ties such as legal services, lobbying, and public relations—remain above baseline levels nationwide, with elevated concentrations in state capitals like Helena (MT) and Bismarck (ND).

Among the most overrepresented sectors in these regions are Engineering Services (RS = 3.92), Marketing Consulting (RS = 3.56), and notably, Environmental Organizations (RS = 3.47). While environmental organizations may act as allies in sustainable policy development, their disproportionate political presence raises concerns about blurred lines between advocacy and rent extraction. These findings support Baumol's (1990) and Krueger's (1974) concerns that policy influence, rather than innovation, can become the primary driver of entrepreneurial returns.

Additional evidence drawn from the OpenSecrets database further supports this pattern. In 2024, lobbying expenditures in the energy and natural resource sector exceeded $432 million, ranking fourth among all sectors. These expenditures often spike in response to major legislative activity. For example, lobbying outlays surged following the passage of the Biden administration's landmark clean energy investment package—highlighting how public policy windows invite stra-

tegic behavior by vested interests (McFarlane 2024). Over the past decade, lobbying activity in environmental sectors has trended upward, underscoring the growing influence of organized interests in shaping green legislation.

Figure 3: Federal Lobbying Expenditures by Sector in 2024

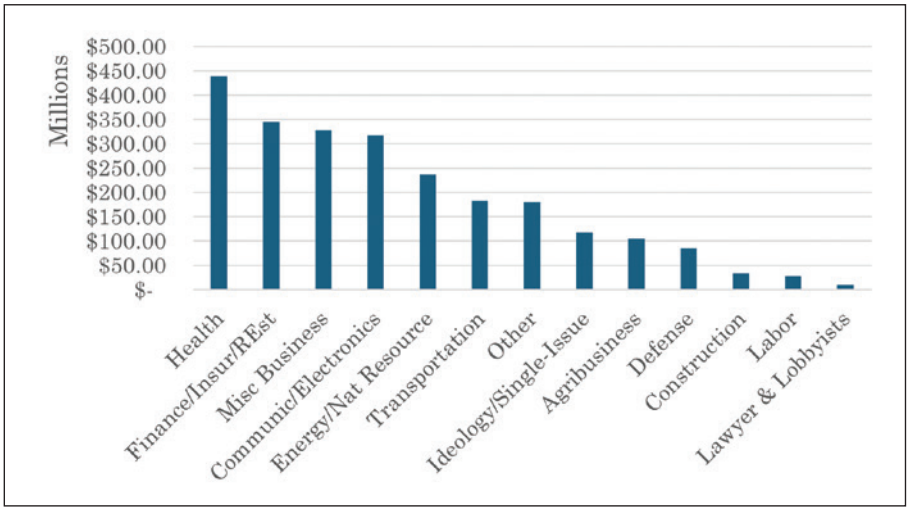
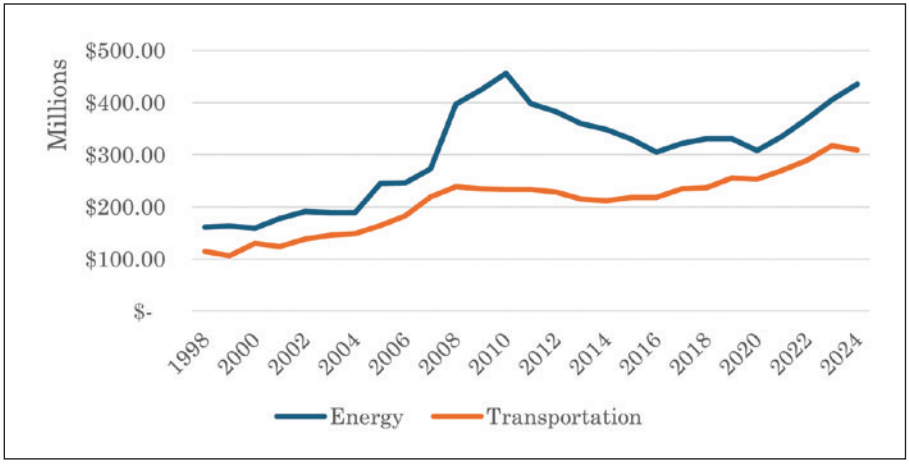


Figure 4: Energy and Transportation Resource Lobbying Expenditure Over Time



In this paper, we examine how environmental advocacy can be leveraged by eco-entrepreneurs to create rent-seeking opportunities, utilizing Bootleggers, Baptists, and Political Entrepreneurs framework introduced by Simmons et al. (2011). Eco-entrepreneurship fits naturally within this framework. Many sustainable ventures operate at the intersection of normative advocacy and economic self-interest. The convergence of public subsidies, moral arguments, and political intermediation creates a fertile ground for rent-seeking, particularly when institutional safeguards are weak or regulatory discretion is high.

These empirical patterns underscore the structural conditions under which eco-entrepreneurial rent-seeking emerges. To examine how these dynamics manifest in practice, we now turn to a comparative analysis of three country case studies.

5. Case Studies

This section examines case studies from the United States, Spain, and Singapore to illustrate how rent-seeking emerges at the intersection of environmental policy and eco-entrepreneurship, and how these dynamics are shaped by distinct institutional and regulatory environments.

5.1 United States

The case of Solyndra serves as a significant example of the risks associated with government intervention in private enterprise, particularly within the renewable energy sector. This case study explores the rise and fall of Solyndra, a solar panel manufacturer that received substantial federal support before its abrupt bankruptcy. It highlights issues of rent-seeking, policy missteps, and broader implications for government involvement in business ventures.

Solyndra was founded in 2005 with the goal of producing solar panels using copper, indium, gallium, and Di selenide (CIGS) technology. Positioned as an innovator in the renewable energy industry, the company attracted interest from investors and policymakers alike. In 2009, Solyndra became the first recipient of a loan guarantee under the Obama administration's economic stimulus program, securing $535 million from the U.S. Department of Energy (DOE) to support the construction of a new manufacturing facility. This loan was part of a broader effort to combat climate change and stimulate investment in clean energy technologies (Murphy 2012; Olson and Biong 2015).

Despite its initial promise, Solyndra soon encountered significant financial difficulties. Several factors contributed to the company's downfall. The price of polysilicon, the key component in traditional solar panels, fell by approximately 89% between 2009 and 2011, making Solyndra's technology less competitive (ibid. 2012). Chinese manufacturers, benefiting from economies of scale, flooded the market with cheaper alternatives, undercutting Solyndra's cost structure (Sidhu et al. 2012). Additionally, the company's manufacturing facility, built at a cost of $733 million, was expensive to maintain. Reports indicated that Solyndra made excessive expenditures, such as investing in automated robots and luxurious employee amenities, which contributed to its financial instability (Boaz 2012). Although Solyndra generated $100 million in revenue in 2009, it struggled to achieve profitability. Its reliance on premium pricing for its solar panels proved unsustainable in the face of declining industry costs (Murphy 2012).

In August 2011, Solyndra filed for Chapter 11 bankruptcy, ceasing operations and laying off approximately 1,100 employees. The company's collapse led to multiple investigations into its financial practices and the government's role in the loan approval process. The Federal Bureau of Investigation (FBI) executed search warrants at Solyndra's headquarters, probing allegations of accounting fraud and financial misrepresentation (Ibid 2012). Meanwhile, the House Energy and Commerce Committee conducted hearings to examine the circumstances surrounding the loan guarantee. Lawmakers questioned whether political influence played a role in the decision-making process (Olson and Biong 2015; Caprotti 2017).

Solyndra's case exemplifies rent-seeking behavior, where private entities seek government advantages rather than relying on market competition. Solyndra spent nearly $1.9 million on lobbying activities between 2008 and 2011, aiming to secure favorable treatment from policymakers (Murphy 2012; Boaz 2012). Investigations revealed that key investors in Solyndra had ties to major political fundraisers, raising concerns about the impartiality of the loan approval process (Harvard Kennedy School 2012; Caprotti 2017).

The Solyndra affair has sparked debate over the efficacy of government loan guarantees and grants in promoting renewable energy. Policy recommendations include requiring more rigorous financial and market analysis before allocating taxpayer funds to private enterprises. A carbon pricing system could create incentives for reducing emissions, allowing private investors to respond to market signals rather than relying on direct government intervention. Additionally, gov-

ernment funding for private enterprises should be contingent upon clear performance metrics and transparency measures to ensure public resources are used effectively (Sidhu et al. 2012; Caprotti 2017).

The Solyndra case illustrates the challenges of government efforts to stimulate innovation within the private sector. While the intention to promote renewable energy is commendable, the execution of such initiatives requires careful planning, transparency, and adherence to market principles. Without these safeguards, public investments risk financial mismanagement and rent-seeking behaviors that ultimately undermine their intended economic and environmental benefits.

Lobbying data is crucial for the integration of politics and rent-seeking practices that intertwine with eco-entrepreneurship. Businesses, such as Solyndra, lobby regularly for grants that support their environmental ventures and interests. The relevance of lobbying data to rent-seeking practices can be used to manipulate the political environment for monetary gain, without truly contributing to entrepreneurship. Rent-seeking behavior can be seen through influencing regulations that favor and advantage certain eco-businesses, creating multiple barriers to entry for up-and-coming environmentally friendly businesses.

5.2 Spain

Spain has been a leader in investment in renewable energy. The push for renewables is rooted in initiatives like the EU's Green Pact, the Kyoto Protocol, and Spain's National Integrated Energy and Climate Plan (NIECP) 2021–2030. In the 2000s, investment in renewables in Spain increased production by over 120 percent, compared to the European Union average, 77 percent (Espinosa et. al. 2021: 2). The investments in renewable energy have resulted in renewable production that is approximately 51 percent wind, 36 percent hydraulic, and around 8 percent solar, with other sources below 5 percent (ibid.: 7). According to the International Energy Agency, 42 percent of Spain's total energy consumption comes from renewable energy.[11]

In their paper, "The Political Economy of Rent-Seeking: Evidence from Spain's Support Policies for Renewable Energy," Espinosa et. al (2021) focus on Spain's renewable energy sector and the unintended consequences of its support-

11 "Energy system of Spain. IEA, available online at https://www.iea.org/countries/spain (accessed July 17, 2025)

ive energy policies, which they argue have fueled rent-seeking behavior and have led to market concentration and higher consumer costs.

The primary focus of the study is the regulatory framework. Existing regulation creates significant barriers to entry and encourages a small group of just four giant firms—Endesa, Iberdrola, Naturgy, and EDP—to dominate the Spanish energy sector (ibid.: 7). The four firms control 85% of energy production and 100% of the distribution network. This oligopolistic structure stifles competition and exacerbates inefficiencies in the energy sector. Further, perverse incentives are at play; firms are not rewarded for efficiency, or lower costs.

Like many utility sectors, regulators dictate the premiums that firms are allowed to charge. Unfortunately, they have allowed these high-cost energy firms to charge higher premiums. One reason is that Spain has adopted a "feed-in tariff" policy. These policies guarantee a fixed price for the renewable energy that is generated and "fed into" the grid. This price is higher than for non-renewable energy, and it is set for an extended period of time. Together, the lack of competition and feed-in tariff results in consumers paying higher energy bills.

Applying the framework from Yandle (1983) and Simons et. al. (2011), in Spain, the dominant energy firms—Endesa, Iberdrola, Naturgy, and EDP—serve as the "bootleggers," aligning their economic interests with environmental goals to exploit renewable energy regulations for profit. These firms leverage the moral legitimacy provided by "Baptists"—environmental organizations like Greenpeace Spain and Fundación Renovables—who champion the transition to clean energy. This moral framing allows dominant firms to justify subsidies and maintain their oligopolistic control under the pretense of environmental progress.

However, high regulatory barriers engineered through their lobbying efforts restrict market entry, ensuring that dominant firms retain control. Political entrepreneurs, such as lobbyists and industry advocates, seize the opportunity presented by the renewable energy agenda to shape policies in favor of the dominant energy firms. Acting as intermediaries, they promote regulatory frameworks that appear environmentally progressive but are designed to benefit entrenched interests. By securing over compensatory premiums, bootleggers capitalize on rent-seeking opportunities created by these policies. Political entrepreneurs frame these subsidies as essential for renewable energy development, aligning with Baptist arguments to gain public and political support. The resulting inefficiencies are felt by the energy consumer and potentially stifle innovation in renewables.

5.3 Singapore

Singapore offers a distinctive case of eco-entrepreneurship shaped not by overt corruption, but by a state-led model that institutionalizes rent-seeking through tightly managed public-private linkages. Though widely praised for regulatory efficiency (within EFW index regulation metric is 8.73) and low corruption (Corruption Index is 84), Singapore's developmental state creates strong incentives for firms to orient toward state favor rather than open-market competition.

Cheang (2025) describes this as a form of "subsidy entrepreneurship," where public grant programs—such as the Enterprise Development Grant (EDG)—are deliberately structured to minimize friction. These programs provide generous, easily accessible funding to firms that meet broad eligibility criteria, including local shareholding and modest revenue or staffing thresholds. While intended to spur innovation and productivity, such mechanisms also normalize rent-seeking as a routine business strategy. Entrepreneurs come to view state funding as an expected input rather than a competitive reward, eroding the boundary between public support and private entitlement.

This dynamic is reinforced by what Cheang (ibid.: 112) calls "embedded autonomy:" the state's ability to intervene extensively in markets while remaining formally insulated from interest group capture. In practice, this means the government maintains tight coordination with business actors through advisory councils, industry partnerships, and co-investment platforms—shaping firm behavior while projecting regulatory neutrality. Over time, this creates a business culture where firms "willingly participate in national ambitions" by aligning with state priorities, often at the expense of entrepreneurial independence (ibid.: 136 2023). Survey data supports this view. Cheang's comparative study of entrepreneurs in Singapore and Hong Kong reveals that Singaporean respondents were significantly more likely to expect government support and more comfortable leveraging grants—even for projects of marginal public value. Rent-seeking is not just tolerated; it is seen as a legitimate, even patriotic, mode of engagement in Singapore's high-capacity developmental regime.

This institutional configuration aligns closely with the Bootlegger and Baptist framework. Government rhetoric around green innovation and national sustainability targets serves as the moral narrative (the Baptist), while firms pursue grants, subsidies, and state-linked opportunities as a path to secure advantage (the Bootleggers). The state itself—through agencies and policy entrepreneurs—acts

as a coordinating broker, simultaneously advancing environmental policy and reinforcing its own legitimacy through economic performance.

Singapore's green agenda provides fertile ground for this interaction. In pursuit of net-zero targets, the government has introduced tax incentives and funding schemes for businesses undertaking sustainable projects (Yan Goh et al. 2024). These programs create visible support for climate goals but also expand the terrain for rent-seeking, particularly when grant allocation lacks rigorous performance evaluation or competitive mechanisms.

The consequences are twofold. First, distinguishing between productive and unproductive entrepreneurship becomes difficult when grants are widespread and loosely monitored. Second, a dependency mindset can emerge, with firms delaying market adaptation in favor of recurring public support. This blurs the line between developmental planning and privilege, raising questions about long-term resilience in Singapore's entrepreneurial ecosystem. Eco-entrepreneurship in such environments may flourish quantitatively, but without adequate checks, risks becoming strategically responsive to the state, rather than environmentally or economically transformative.

6. Discussion and Conclusion

In this study, we examined how state-led efforts to promote eco-entrepreneurship can inadvertently foster rent-seeking, diverting entrepreneurial energy from innovation to political influence. Empirical cases reinforce this dynamic. In the U.S., Solyndra secured substantial federal loan guarantees through political connections, despite clear market risks. In Spain, regulations shield incumbents from competition, resulting in higher costs for consumers. In Singapore, deep public-private linkages institutionalize rent-seeking, as firms orient toward state favor rather than market success.

These cases reveal a structural vulnerability in sustainability policy: when access to state support becomes more rewarding than innovation, eco-entrepreneurship risks becoming a vehicle for privilege. Addressing this requires policy frameworks that emphasize transparency, competition, and market-based mechanisms over discretionary subsidies or opaque incentives. Without such reforms, even well-intentioned environmental agendas risk being captured by the very interests they aim to regulate.

6.1 Common Themes and Policy Implications

Across the case studies of the United States, Spain, and Singapore, several recurring themes emerge regarding rent-seeking in eco-entrepreneurship. Understanding these themes allows for the formulation of more effective policies to balance entrepreneurial incentives, environmental goals, and economic efficiency.

1. *Poorly designed interventions can incentivize rent-seeking.* Government intervention plays a crucial role in fostering eco-entrepreneurship by correcting market failures, funding innovation, and reducing financial risks for emerging firms. However, when these policies are designed without sufficient oversight or transparency, they create opportunities for rent-seeking, where businesses prioritize securing subsidies, tax benefits, and regulatory advantages over developing competitive, sustainable technologies. In the U.S., Solyndra exemplified this dynamic, securing funding based on connections rather than market viability. In Spain, overly generous renewable energy subsidies and inefficient actors have increased utility bills for consumers. In Singapore, close state-business linkages institutionalized expectations of state support.
2. *Rent-seeking distorts market competition and stifles innovation.* One of the most significant consequences of rent-seeking in eco-entrepreneurship is the distortion of market dynamics. Preferential treatment for incumbent firms—via regulatory barriers, opaque subsidies, or exclusive contracts—creates unfair advantages that discourage entry by new, innovative firms. In Spain, dominant energy companies leveraged regulation to entrench their market power, creating an oligopolistic structure. In Singapore, public-private partnerships reinforced incumbents' advantages, limiting opportunities for independent eco-entrepreneurs and reducing competitive pressure to innovate. This dynamic contradicts the principles of "creative destruction," and instead preserves inefficient firms, leading to market stagnation and misallocation of resources.
3. *Political entrepreneurs facilitate regulatory capture.* Another recurring theme is the role of political entrepreneurs—policymakers, lobbyists, and government officials—who facilitate rent-seeking by shaping policies in favor of specific firms or industries. Regulatory capture occurs when policymakers, instead of acting in the public interest, design policies that disproportionately benefit well-connected firms at the expense of genuine market

competition. These case studies demonstrate that rent-seeking is not just a corporate strategy but also a product of political decision-making, where alliances between businesses and policymakers distort environmental and economic goals.

4. *Transparent, competitive, and market-based policies are critical.* Reducing the incentives for rent-seeking behaviors is critical for the correction and rehabilitation of eco-entrepreneurial behaviors within economic development. Enforcing and implementing transparent policies will promote environmental stability within entrepreneurship and make it difficult for manipulation through loopholes by firms and businesses.

6.2 Guiding Principles For Policy

Drawing on the lessons from the case studies and the need to balance government intervention with market forces, we recommend the following guiding principles for policy design. These principles aim to foster genuine innovation, minimize rent-seeking, and align eco-entrepreneurship with long-term environmental and economic goals:

1. *Introduce property rights and internalize externalities.* Policymakers should expand the use of market-based mechanisms—such as carbon pricing, tradable emissions permits, and other instruments that internalize environmental costs—into more areas of the economy. Establishing clear property rights and enforceable obligations forces firms to account for the true social costs of their activities while creating markets in which externalities can be traded efficiently. Such mechanisms reduce the reliance on opaque, discretionary subsidies and encourage firms to compete by innovating in ways that lower environmental impact. Carbon pricing, in particular, sends a clear economic signal to emitters: transform operations and reduce emissions, or continue emitting and pay the associated costs.
2. *Ensure full transparency and accountability.* Policies should mandate full disclosure of lobbying activities, political contributions, gifts, and the beneficiaries of public subsidies and contracts. This transparency limits the ability of well-connected firms to capture rents through backroom deals and helps citizens and competitors hold both businesses and policymakers accountable. In addition, governments should also establish clear and transparent criteria for granting subsidies, loan guarantees, and other

forms of public support, backed by rigorous evaluation of applicants. Public registries of subsidies, competitive bidding for contracts, and equal access to funding opportunities reduce opportunities for favoritism and rent-seeking.

3. *Favor consumer-side incentives over producer-side subsidies.* Where financial support is warranted, governments should structure it to empower consumers rather than directly subsidize producers. For example, rather than selecting and funding a specific solar company, policies should provide incentives to consumers (households, firms) to adopt solar technologies, letting them choose among competing providers. This approach maintains competitive pressure among producers, fosters healthy market dynamics, and helps avoid monopolistic outcomes. Ensuring that eco-entrepreneurs of all sizes have equal access to markets and resources prevents entrenched incumbents from capturing undue advantage.
4. *Clarify rules to reduce uncertainty and accelerate innovation.* In emerging sectors where regulatory frameworks are underdeveloped—such as autonomous vehicles or certain clean technologies—governments should prioritize establishing clear and predictable rules. Regulatory ambiguity can stifle innovation by creating uncertainty about permissible business models and potential liabilities. As Amartya Sen observes, policy must treat firms and individuals not as passive "patients" but as active "agents" capable of creative response (Sen 1995: 11-12). Strengthening — and where necessary, creating — clear policy frameworks allows innovators to proceed confidently while safeguarding the public interest. Opaque or inconsistent rules deny firms the ability to act as agents, encouraging rent-seeking and defensive behavior. In contrast, predictable and fair rules enable entrepreneurial agency, fostering innovation and aligning private initiative with social goals.
5. *Foster open and competitive markets.* Healthy competition is vital for suppressing rent-seeking and promoting innovation. Governments should actively remove artificial barriers to entry, dismantle exclusive privileges, and prevent emerging monopolies that benefit from advantageous treatment. Policies should aim to create level playing fields where eco-entrepreneurial firms compete on the merits of their innovations rather than their political connections.

6.3 Balancing Government Intervention and Market Forces

Public investment is often necessary in the early stages of clean energy development, where the private sector is hesitant due to high initial costs and uncertain returns limiting investment opportunities. If designed effectively, government policies can drive technological advancements and create new industries while avoiding the pitfalls of rent-seeking. A balanced approach—one that encourages innovation while safeguarding against regulatory capture—is essential. By refining policy frameworks, increasing transparency, and fostering competition, governments can ensure that eco-entrepreneurship serves both environmental and economic goals, ultimately contributing to a more sustainable and equitable global economy.

References

Acemoglu, Daron and James Robinson. 2013. *Why Nations Fail: The Origins of Power, Prosperity, and Poverty.* New York: Crown Currency.

Acs, Zoltán J., David B. Audretsch, Erik E. Lehmann, and Georg Licht. 2016. "National Systems of Entrepreneurship." *Small Business Economic*s 46 (4): 527–535.

Acs, Zoltan J., Erik Stam, David B. Audretsch, and Allan O'Connor. 2017. "The Lineages of the Entrepreneurial Ecosystem Approach." *Small Business Economics* 49 (1): 1–10.

Alvarez, Sharon A., and Jay B. Barney. 2007. "Discovery and Creation: Alternative Theories of Entrepreneurial Action." *Strategic Entrepreneurship Journal* 1, no. 1–2: 11–26.

Audretsch, David B., Max C. Keilbach, and Erik E. Lehmann. 2006. *Entrepreneurship and Economic Growth*. New York: Oxford University Press.

Baumol, William J. 1990. "Entrepreneurship: Productive, Unproductive, and Destructive." *Journal of Political Economy* 98, no. 5, part 1: 893-921.

Bennett, Daniel L. 2021. "Local Economic Freedom and Creative Destruction in America." *Small Business Economics* 56, no. 1: 333–53.

Boaz, David. 2012. "Solyndra: A Case Study in Green Energy, Cronyism, and the Failure of Central Planning." *Cato Institute*. Available online at https://www.cato.org/blog/solyndra-case-study-green-energy-cronyism-failure-central-planning. (Accessed May 2025)

Brundtland Report. 1987. "Our Common Future, From One Earth to One World." World Commission on Environment and Development. Available online at https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf. (Accessed May 2025)

Buchanan, James M. 1980. "Rent Seeking and Profit Seeking*."* In James M. Buchanan, Robert D. Tollison, and Gordon Tullock (eds.), *Toward a Theory of the Rent Seeking Society*. College Station, Texas: Texas A&M University Press: 3-15.

Canh, Nguyen Phuc, Sangho Kim, and Su Dinh Thanh, 2020. "Entrepreneurship and natural resource rent-seeking: The roles of institutional quality." *Economics Bulletin* vol. 40(2):1159-1177.

Caprotti, Federico. 2017. "Protecting Innovative Niches in the Green Economy: Investigating the Rise and Fall of Solyndra, 2005–2011." *GeoJournal* 82.

Cheang, Bryan. 2025. "Subsidy Entrepreneurship and a Culture of Rent-Seeking In Singapore's Developmental State." *Studies in Comparative International Development* 60: 111-141.

Chen, Yu, Shuwei Ren, and Yingjie Ma. 2024. "The impact of eco-preneurship and green technology on greenhouse gas emissions: An analysis of East Asian economies." *Heliyon* 10(8), e29083.

Crals, Evy and Lode Vereeck. 2005. "The affordability of sustainable entrepreneurship certification for SMEs." *International Journal of Sustainable Development and World Ecology* 12: 173-183.

Dean, Thomas J. and Jeffery S. McMullen. 2007. "Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action". *Journal of Business Venturing* 22(1): 50-76.

Doh, Jonathan P., Peter Tashman, and Mirko H. Benischke. 2019. "Adapting to Grand Environmental Challenges Through Collective Entrepreneurship" *Academy of Management Perspectives* 33, no. 4: 450-68.

Espinosa, Victor I., José Antonio Peña-Ramos, and Fátima Recuero-López. 2021. "The Political Economy of Rent-Seeking: Evidence from Spain's Support Policies for Renewable Energy." *Energies* 14, no. 14: 4197.

Gunawan, Janti and Kym Fraser. 2016. "Exploring Young and Green Entrepreneurship in Indonesia: An Introduction." *Journal of Asian Business Strategy* vol. 6(9): 185-194.

Gutterman, Alan. 2020. "Definitions and Types of Entrepreneurship." *SSRN Electronic Journal.*

Gwartney, James, Robert A. Lawson, Joshua C. Hall, Ryan Murphy, Simeon Djankov and Fred McMahon. 2022. "Economic Freedom of the World: 2022 Annual Report." Fraser Institute. Available online at https://efotw.org/studies/economic-freedom-of-the-world-2022-annual-report. (Accessed June 26, 2025)

Gwartney, James, Robert A. Lawson, Ryan Murphy, Matanda Abubaker, Andrea Celico, Alexander C.R. Hammond, Fred McMahon and Martin Rode. 2023 "Economic Freedom of the World, 2023 Annual Report." Fraser Institute. Available online at: https://www.fraserinstitute.org/sites/default/files/2023-10/economic-freedom-of-the-world-2023.pdf (Accessed June 2025)

Hardin, Garrett. 1968. "The Tragedy of the Commons." *Science, New Series*, 162 (3859): 1243–48.

Harvard Kennedy School. 2012. Shaping the Future of Solar Power: *Climate Change, Industrial Policy, and Free Trade*. Cambridge, MA: Harvard Kennedy School.

Horisch, Jacob, Jana Kollat, and Steven Brieger. 2016. "What influences of environmental entrepreneurship? A multilevel analysis of the determinants

of entrepreneurs' environmental orientation". *Small Business Economics* 48, no.1:47-69.

Isaak, Robert. 2002. "An Insider's experiences with Environmental Entrepreneurship." *Greener Management International* 38: 81-91.

Kirzner, Israel M. 2011. "The Economics of Greed or the Economics of Purpose." In Emily Chamlee-Wright (ed.) *The Wealth and Well-Being of Nations*, Beloit College Press: 17-31.

Kotchen, Matthew J. 2009. "Some Microeconomics of Eco-Entrepreneurship." In Gary Libecap (ed.), *Frontiers of Eco-Entrepreneurship Research,* Emerald Books, pp. 25-37.

Krueger, Anne O. 1974. "The Political Economy of the Rent-Seeking Society." *American Economic Review* 64: 291-303.

Isaak, Robert. 2002. "The Making of the Ecopreneur." *Greener Management International* no. 38 (Summer): 81–91.

Leach, John. 2003. "Impure Public Goods." *In A Course in Public Economics*, Cambridge: Cambridge University Press, pp. 187-99.

Lu, Ding. 1994. "The Entrepreneurs Who Do Both: Production and Rent-Seeking." *Journal of Economic Behavior and Organization 23* (1994): 93-98.

McFarlane, Lydia. 2024 "Spending on environmental lobbying on the rise during Biden administration." *Investigate Midwest*. Available online at https://investigatemidwest.org/2024/02/16/spending-on-environmental-lobbying-on-the-rise-during-biden-administration/ (Accessed May 2025)

Meckling, Jonas, Joseph E. Aldy, Matthew J. Kotchen, Sanya Carley, Daniel C. Esty, Peter A. Raymond, Bella Tonkonogy, Charles Harper, Gillian Sawyer, and Julia Sweatman. 2022. "Busting the Myths around Public Investment in Clean Energy." *Nature Energy* 7, no. 7: 563–65.

Melo, Vitor and Elijah Neilson. 2023. "Introducing an Index of Rent Seeking: A Synthetic Matching Approach." *Public Choice* Vol. 197(3): 471-487.

Merton, Robert K. 1936. "The Unanticipated Consequences of Purposive Social Action." *American Sociological Review 1*, no. 6: 894-904.

Mitchell, Matthew. 2014. "The Pathology of Privilege: The Economic Consequences of Government Favoritism." Arlington, VA: Mercatus Center at George Mason University.

Murphy, Robert P. 2012. "Lessons from Solyndra." *Econlib*. Available online at https://www.econlib.org/library/Columns/y2012/Murphysolyndra.html. (Accessed June 2025)

Nelson, John. 2015. "Renewable Energy, Climate Change, and Entrepreneurship." Bruce Palmer (ed.) *In The Wealth and Well-Being of Nations,* Beloit

College Press, pp. 151-157.

North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

Olson, Erik L. and Harald Biong. 2015. "The Solyndra Case: An Institutional Economics Perspective on the Optimal Role of Government Support for Green Technology Development." I*nternational Journal of Business and Commerce Research Methods 5*, no. 3: 25-40.

Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.

Schumpeter, Joseph A. 2003. *Capitalism, Socialism and Democracy*. 5th ed. London and New York: Taylor & Francis e-Library.

Sen, Amartya. 1995. "The Political Economy of Targeting." In Dominique van de Walle and Kimberly Nead (eds.) *Public Spending and the Poor: Theory and Evidence*, Washington, DC: The World Bank, pp. 11–24

Shane, Scott. 2009. "Why Encouraging More People to Become Entrepreneurs Is Bad Public Policy." *Small Business Economics* 33, no. 2: 141–149.

Sidhu, Ikhlaq, Shomit Ghose, and Paul Nerger. 2012. *Solyndra 2011 Case Study*. Release Version 3.3.1. Berkeley: University of California.

Simmons, Randy T., Ryan M. Yonk, and Diana W. Thomas. 2011. "Bootleggers, Baptists, and Political Entrepreneurs: Key Players in the Rational Game and Morality Play of Regulatory Politics." *The Independent Review* 15, no. 3: 367-381.

Smith, Adam. 1904. *An Inquiry Into the Nature and Causes of the Wealth of Nations*. Edited by Edwin Cannan. Vol. 1. Book I, Chapter 2. London: Methuen & Co., Ltd.

Stavins, Robert N. 2011. "The Problem of the Commons: Still Unsettled After 100 Years." *American Economic Review* 101, no. 1 (2011): 81–108.

Transparency International. 2024. "Corruption Perceptions Index," Available online at https://www.transparency.org/en/cpi/2024. (Accessed June 26, 2025)

United Nations Framework Convention on Climate Change (UNFCCC). 2015. *Paris Agreement*. Available online at https://unfccc.int/sites/default/files/english_paris_agreement.pdf. (Accessed June 2025)

United Nations Development Programme. 2024. "Human Development Index (HDI)." In Human Development Report 2023/2024: Breaking the Gridlock. New York: UNDP. Available online at https://hdr.undp.org/data-center/human-development-index. (Accessed June 2025)

Urbaniec, Maria. 2017. "Green Entrepreneurship: Exploring a New Role for Business." *Przedsiębiorczość i Zarządzanie* 18, no. 12.2: 49-64.

World Bank Group. 2024. "What is Carbon Pricing?" *The World Bank Group*, Available online at https://carbonpricingdashboard.worldbank.org/what-carbon-pricing (Accessed June 2025)

World Intellectual Property Organization. 2024. *Global Innovation Index 2024: Embracing the Opportunity of Innovation*. Geneva: WIPO. Available online at https://www.wipo.int/web-publications/global-innovation-index-2024/en/ (Accessed June 2025)

Yale Center for Environmental Law & Policy. 2024. *Environmental Performance Index 2024*. New Haven, CT: Yale University. Available online at https://epi.yale.edu/. (Accessed June 2025)

Yan Goh, Cher, Chua, Mei Shan. 2024. "Singapore, An Eco-Friendly City, And Government Incentives for Green Projects." *Alvarez & Marsal*. Available online at https://www.alvarezandmarsal.com/insights/singapore-eco-friendly-city-and-government-incentives-green-projects (Accessed June 2025)

Yandle, Bruce. "Bootleggers and Baptists - The Education of a Regulatory Economist" *AEI Journal on Government and Society, 12–16.*, https://techliberation.com/wp-content/uploads/2010/12/v7n3-3.pdf

Zahra, S. A., and M. Wright. 2016. "Understanding the social role of entrepreneurship." *Journal of Management Studies* 53(4): 610-629.

A Strategy Map to Placemaking: A Case Study of Janesville, Wisconsin

Oakleigh Ryan[1]

1. Introduction

Place is an interesting concept: Place as a physical location, place as a sense of belonging, place as defined by cultural norms or esthetics. There are many interpretations of place. In the world of economic and community development, place and its action-oriented cousin, placemaking, have become a useful net to capture a complex set of ideas that have an enormous impact on the wealth and well-being of nations and society.

Through his scholarship, David Audretsch has developed a cohesive framework in which places (cities, regions, or states) can consciously choose from four elements or areas of impact to drive economic prosperity or simply put, to improve. They are (1) resources and factors of production, (2) organization and spatial structure, (3) the human dimension and (4) public policy. This is in contrast to the more common fragmented academic approach, according to specialty, to development of place. In fact, Audretsch's playbook articulated in his book, *Entrepreneurship and The Strategic Management of Place* (2015), calls upon and gives credit to these distinct models of development. Audretsch does not purport to have a single action list but serves us a menu of key ingredients within his four areas. Much like the entrepreneur's journey, there is no perfect formula for success but rather identifying and capitalizing on unique assets of a place in a coordinated approach and then galvanizing action is the key to superior outcomes.

Using this framework as a magnifying glass, I look at my own city of Janes-

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ville, Wisconsin, incorporated in 1853, five years after Wisconsin's entry into the Union, to evaluate its own development. Through the lens of Audretsch's paradigm, Janesville can be seen through four distinct growth phases that in some shape or form were led not by the invisible hand of the market but through the coordinated work of civic and political leaders to create a road to prosperity for its citizens even in the face of upheaval. The four periods I will briefly examine are 1853-1917, 1918-1986, 1987-2008, and 2009 to the present. In these periods, I will examine specific examples that give evidence of Audretsch's four dimensions to an improved economic state if utilized as an interconnected platform.

Finally, as evidenced by this case study, I will offer that in the four dimensions of the strategic management of place, there is one seminal ingredient without which the other three cannot rise to provide synergies – and that is the human factor. Not just an equal part of a four-part recipe, it is the water that allows the seeds of prosperity to grow. This reframing of the four elements will encourage and support places to not just look for a playbook but to develop a program of civic duty that it is the responsibility of its citizens to implement.

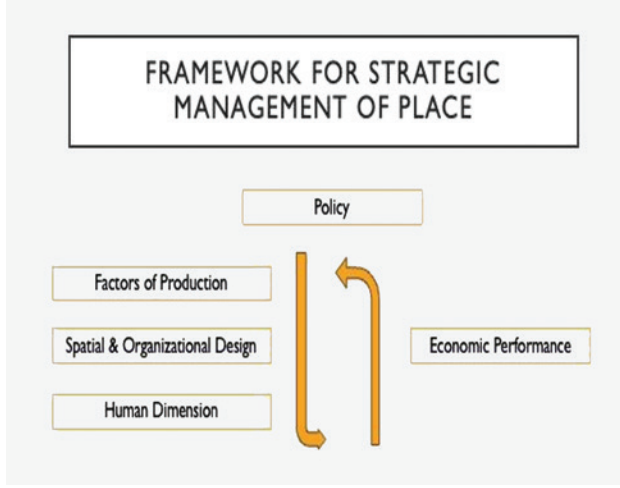
2. The Main Elements of Placemaking

Audretsch's conceptual framework, based on the German concept of Standortpolitik-– the strategic management of place – provides an "inherent flexibility and elasticity, such that it can contract or expand to fit the dimensions as defined by the interested parties" (2015: 10). And who are those interested parties? Referring to the work of Christian Ketels of Harvard Business School, they are the stakeholders of regions and communities who owe a responsibility to their own future and what they can do to shape economic performance (ibid.: 4). This responsibility became more challenging as the most prominent 20th century economic development strategy of focusing on investment in physical capital (or smokestack chasing) seemed ill-equipped to handle the complexities of the growing global economy. Thomas Friedman in his book, *The World is Flat* (2005), explained why the notion of what was good for General Motors was no longer good for Detroit, something that was all too obvious to those living in Janesville, Wisconsin, another GM town at the turn of the 21st century.

In response, varied models for improvement in economic development have evolved with positive results; models that focused on the creative class (Florida 2002), building the knowledge economy, or creating competitive industry clus-

ters (Porter 1998). With this deep understanding of the various policies, tools, and theories of economic empowerment, Audretsch gives us four elements with which a region or city can craft its own playbook, building on its own uniqueness.

Figure 1: Framework for the Strategic Management of Place



Source: Audretsch 2015: 24

Factors of Production are the most typical leverage point one may think of in the pursuit of economic performance, wage growth, and wealth creation. They include the physical: What natural resources are available, what factories exist, and what type of infrastructure supports the area? Beyond the physical assets are those that come with human capital including skilled and unskilled labor, and in the production of goods and services, what knowledge is being created that can benefit a place and build a R&D center? Great cities tap into their factors of production over time.

The organization of these factors of production matter, which takes us to Audretsch's second element, **Spatial and Organization design.** His work does not say one configuration is preferable. The concentration of market power and impact of Walmart in Bentonville, Arkansas compared to the start-up and entrepreneurial culture of Silicon Valley yield different but positive results and both have their own risks. Is it best to have clusters of like industries or a diversified economic base? There is no silver bullet according to Audretsch's research and citing of various experts.

Layering into the physical and organizational aspects of place is the **Human Dimension** which entertains the idea of civic society explored by Frenchman Alexis de Tocqueville (2000) in his travels in the US in the early 1830s, noting the country's unique ability to form volunteer associations. Likewise, the decline of social capital since 1950 as identified in Robert Putnam's 1995 essay entitled "Bowling Alone: America's Declining Social Capital" can have profound impact on place and its performance. This human element goes beyond just creating places for people to come and includes physical attachment, love for a place and how a place brands itself. And finally, do in fact the stakeholders do something about their place?

The last element that Audretsch uses to build his model is **Policy** and the ability for action at various public levels (local, regional, state, and national) to have an impact on the economic performance of place. Policy can be varied and controversial as we witness the swinging pendulum of the policy toolkit of different administrations at the federal level. The policy list for housing, energy consumption, tariffs, and regulations is extensive. But policy alone is not the cure-all for economic performance as is none of these four elements. Instead, their power is unleashed when cast as complements to each other in the pursuit of the well-being of a place by invested stakeholders.

3. Janesville, the Case Study of Placemaking

If Audretsch's argument rings true, then reviewing the development and growth of my own hometown, Janesville, Wisconsin through this approach, should yield the answer that a multi-pronged approach has yielded the best possible outcome, even when Lady Fortune deals a bad hand. In fact, I would argue that the development of Janesville, Wisconsin is a testimony to the natural blend of nature and nurture showing how different factors of production, organizational make up, human impact and, yes, policy, can have on a community's well-being.

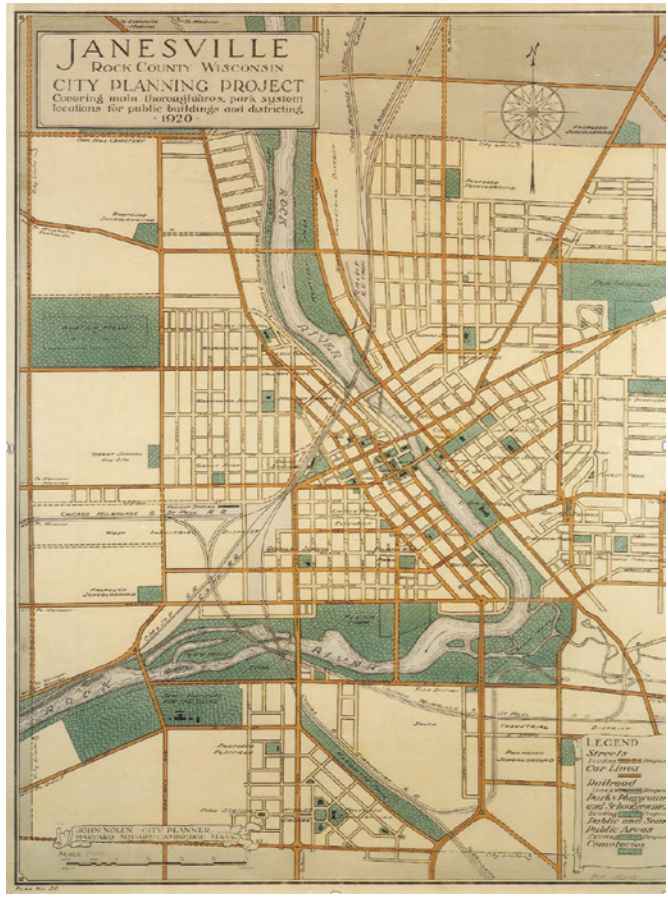
Janesville, Wisconsin was founded in 1835 by Henry Janes in fertile area along the Rock River, home to Ho-Chunk and Pottawatomie Native Americans. Today it is the county seat of Rock County, the southern county of the eight county Madison Area Regional Planning Area (MadRep). Janesville continues to have a growing (albeit modestly) population and is the 10th most populous city in Wisconsin. Equally important, Janesville and Beloit form a Metropolitan Statistical Area (MSA), an important qualification for economic tracking. Four

periods of time will be used to examine Janesville's development organized around Audretsch's model.

3.1 Janesville 1853-1917: Building a City

Janesville was incorporated in 1853 and by 1860 had a population of over 7,000 which would more than double by 1920. The map below shows the City at the end of this period and the five wards of the original city all centered around the Rock River. This is a good illustration of the four elements that lent themselves to building this fledgling community.

Figure 2. City of Janesville in 1920



Source: Courtesy of City of Janesville Archives

Factors of production included the Rock River which is a 300-mile tributary of the Mississippi River known as the Sinnissippi to the Sauk and Fox Indians; the name means Rocky Waters. This allowed mills to be developed along the river which refined the raw material from area farms. These products could then be shipped to further distribution points as railroads were laid to reach Chicago, Milwaukee and other places. A manufacturing sector laid its base. Capital was brought from the East by the likes of William Tallman, a lawyer and landowner. Janesville benefited both from skilled and unskilled labor with the Irish and Germans having a strong base, including my husband's own family who came to Wisconsin in the 1850s. Knowledge capital was available as well. A lawyer from Massachusetts, Edward Whiton headed west to the Janesville area to create his legacy, building a Greek Revival home just east of the river and would later serve as the first Supreme Court Justice of the State of Wisconsin. His mark on the state was profound as a key leader in writing the state's Constitution.

The **spatial** relationship of firms was not random but showed a natural formation of clusters around key industries: agriculture, farm equipment, mills, breweries, and lumber. There was no monopolistic hold on this growing town. Entrepreneurialism was thriving. Gray Brewery was founded in 1856 and still produces today. Joseph Craig founded the Janesville Machine Company which created farm implements and would be the predecessor to the General Motors Plant through Samson Tractor in the twentieth century. And Parker Pen was founded by George Stafford Parker, a telegraph agent for the railroad, who by 1888 had true intellectual property when he applied for his first pen patent at age 25.

This abundance of both natural and human capital was leveraged by a strong civic society that showed the power of the **human element**. In *The Good Country* (2022), historian Jon Lauck cites the critical importance of civic organizations that focused on the betterment of man and society in the Northwest Territory in the early 19th century and how this positively impacted and differentiated the region. In this book he acknowledges the key role of women in several movements of the time including women's suffrage, temperance, abolition and prison reform. Lavia Goodell, a Janesville native, was the first woman licensed to practice law in the state of Wisconsin. The Elk Club was founded in 1893 with Rotarians, Lions, Loyal Order of Moose and Optimists to come in the 20th century. Two gentlemen, Levi Alden and Z.A. Stoddard started the weekly *Janesville Gazette* with 300 readers in 1845. Howard Bliss purchased the company in 1883 beginning what would be three generations of ownership.

From a **policy** perspective, the most important element impacting Janesville during this period would have been the support both at the federal and state level for the building of the vast network of railroads. Within Janesville, the laying out of the city wards and roads would help form the foundation from which a city could grow. Rugged individualism balanced with an obligation to do good as noted by de Tocqueville, was in full display in Janesville and the region at this time. This enabled the city to be poised for growth in the 20th century, but not just any growth as will be illustrated.

3.2 Janesville 1918 to 1988: The American Dream

With World War I coming to a close, the world and the United States were looking to a new dawn that would help bring peace and prosperity. This early period was critical for Janesville and what would eventually lead to decades of growth. Janesville's **factors of production** were given a significant boost when city leaders positioned Janesville Machine Company to be purchased by General Motors in 1918 and merged with Samson Tractor. While the plant was opened in 1919, production would pivot to the automobile thanks to the Plant Manager Joseph Craig engaging General Motors following the collapse of Samson Tractor in the face of the farm recession.

Across the river was another growing success story. Parker Pen would create an influx of human and knowledge capital to the city with technical processes that involved mechanical design, engineering, prototyping and testing. Sales for its writing instruments would surpass $1 million by 1918.[2] In 1954 production began on the Jotter, Parker Pen's ballpoint instrument which would sell 3.5 million pens in its first year. Combined, these companies would have a significant and enduring impact on Janesville. What was good for GM and Parker Pen was good for Janesville. This was especially true as each of the companies locally had a strong workforce that was encouraged to be part of the community and to form strong social networks.

As GM grew, **clusters** formed around the automobile industry. At the same time these great companies had entrepreneurs who would launch their own businesses, making sure Janesville was not just a one trick pony. While GM would grow to dominate the economy through its largely union workforce, Janesville

2 See Parker Pen website, https://www.parkerpen.com/parker-history.html

was also quietly being defined by the engineers from Parker Pen. A Janesville without Parker Pen would look very different today even if the company no longer has a local presence.

Photo 1 and 2: Parker Pen and General Motors

Sources: Nathan Fuller, "Arrow Park (Parker Pen)." Clio: Your Guide to History. June 23, 2020 and GM Plant during the 1950s courtesy of Rock County Historical Society Archives.

Perhaps most importantly, **community stakeholders** understood that managed growth was key and using **policy** as a key tool laid the foundation for successful decades to come. In 1918 The Janesville Commerce Club was formed and today survives as Forward Janesville. Invested leaders in this period also worked to pass a referendum for the first million-dollar high school in Wisconsin. It was built by JP Cullen, a company based in Janesville that is now led by its 5th generation. And why this referendum? To recruit General Motors and other employers, it was understood that an educated and able workforce was needed. Looking forward to efficient government, Janesville changed to the City Manager-Council form of municipal government in 1923 via a public vote, making it the longest running city in Wisconsin with this form of government.

Over the decades, public-private partnerships grew as a tool to impact the community. The Commerce Club worked with the City to hire John Nolan to design the park system that today allows Janesville to boast the highest park acreage per 1,000 residents in the state of Wisconsin and gives the City its slogan, "Wisconsin's Park Place." Economic development was the role of not one entity but many as evidenced by a Business Recruitment brochure developed by the Janesville Citizen Committee post WW II.

> This book has been prepared for the information and guidance of industries that are seeking a new home. It provides, in brief form, the essential information about the city in the country. Janesville, Wisconsin, this city is interested in adding a small number of new companies, each with a limited number of employees, to its industrial family. This selective attitude is, we believe, important in maintaining a sound, natural development of the city (Janesville Citizens Development Committee).

These decades were a classic example of multiple stakeholders taking the responsibility to manage the development of the city, and these multiple stakeholders adopted various practices to build their own playbook. And like any playbook, not every action necessarily created a positive return, especially in the long run. The development of the Janesville Mall near the highway was the early indicator for the demise of downtown, and the placement of a concrete parking lot in downtown over the Rock River in the same decade ignored the very resource that helped put Janesville on the map. But as the American Dream period came to a close, it was becoming all too obvious that the future was not always going to be in city stakeholders' control. As a harbinger of things to come, Parker Pen's eventual departure from Janesville started with a management buyout of the writing component of the company with headquarters moving to England in 1988. The world was flat indeed.

3.3 Janesville 1989-2008: Planning for Disruption

While General Motors announced the idling of the Janesville plant in summer of 2008, that news, while dreaded, was not without anticipation with both plant and local union 95 leaders having worked during the prior decades to keep it open. James Otterstein, a respected economic development leader in Wisconsin, and responsible for Rock County, oversaw the roller coaster ride of that closing period and worked with many public and private leaders to help manage the tsunami created by the plant's status change and the Great Recession. An estimated $714 million in overall income associated with the GM Plant employment and hence the main **factor of production** in Janesville had evaporated.

Table 1. Employment Impacts (GM Employment)[3]

	Direct	Indirect	Induced	Total
Jobs	2,196	3,954	2,838	8,988
Labor Income	188,557,930	186,921,610	85,195,420	460,674,958
Total Income	289,735,589	267,212,214	167,095,613	724,043,416

Source: GM IMPLAN generated by Steve Deller, UW Madison extension

Amy Goldstein authored *Janesville: The American Story* (2017) and subsequently revisited the subject in an article for the *Brookings Institute* in 2024 detailing the closing of the plant and its impact on the area. A takeaway from both the book and article may be that a place can never really overcome lost union jobs with excellent pay and benefits despite a community's best efforts. But this is a short-term perspective in the long arc of history, and credit goes to the stakeholders of Janesville who were taking action to plan for this disruption two decades earlier.

In the 1980s the two private economic development organizations, Janesville Chamber of Commerce and Janesville Economic Development Corporation, reorganized to become Forward Janesville, the leading 501c3 of the Rock Region with its sister 501c3, the Forward Foundation. Subsequently in the 1990s two multi-million dollar private economic development funds were raised, New Beginnings and New Century Fund, to help prepare the area for a new century, one that might not have a Parker Pen or GM in its future. The Janesville Foundation, created by the Parker family, would be active participants in other economic development efforts including acquiring and protecting key properties along the Rock River. Recognizing that human capital was outflowing from the area and loss of talent very real, a Leadership Development Academy was formed in 2003 to help prepare young professionals to be civic leaders, showing the power of the **human dimension.** This program grew and took on Rock County as its geographic focus and today has trained hundreds of leaders as its own not for profit organization.

3 IMPLAN works off of an Input / Output analysis, effectively modeling the flow of dollars through a community, region or state before it "leaks or leaves". The model assumes fixed relationships. Changes to these relationships are described as *multipliers*, which are the ratios of the overall effects to changes in one or more of the following areas: sales / production, income and employment.

Civic society continued to activate resources including the creation of Rotary Botanical Gardens in 1988, a new Boys & Girls Club cojoined and reimagined with the YMCA of Northern Rock County, and a new public library, built and led by philanthropists Don and Jerry Hedberg in 1996. Then attention turned to the downtown. In 2004 the Janesville Performing Arts Center (JPAC) was opened with a $4 million fundraising effort in an adaptive reuse project led by Stonehouse Development, a Madison based developer. The project converted the 1920 school building that was built with that $1 million referendum into fifty apartments while JPAC took over the old school auditorium. At the same time, the Downtown Design Center was established with mixed public/private funds to help initiate the revitalization of downtown.

The **policy** of the time locally, nationally and at the state level was directed to help these large manufacturing bases remain viable, but in the end, no policy was enough to prevent GM's closing. Locally citizens formed a referendum committee for the Janesville School District and passed what at that time was the largest school referendum in Wisconsin history… for $74 million. Investing prior to a time of upheaval was critical. Planning, not waiting for disruption was the key.

3.4 Janesville: 2009….. What's Next

In reviewing how places respond to disasters whether natural, economic or human, patterns emerge that the driving force of change is the **human factor** with official and unofficial leaders forming together to create a plan that quite literally is meant to move a place forward, to not get stuck. Jim Collins in *Good to Great* (2001) challenges that for organizations to be great they must accept the brutal facts of today while not relinquishing a vision for the future. This becomes a heavy burden for a place where the brutal facts of today are devasting. Yet if its citizens can embrace the realities of the current crisis to use as a rallying cry, there is evidence that this formation around crisis can be a great motivator for change, a point stressed by a preeminent expert on change, John Kotter.

In relatively short order, a group from across Rock County formed Rock County 5.0, a public private consortium to address the free fall. The closing of the GM Plant in 2009 did not immediately move Janesville and the region into a new post GM era, and for a short period, a contingency of public, union, and private individuals advocated for continued plant operation. But as time progressed it became clear the plant would not return, with its official shuttering in 2009. Rock

5.0 and its leaders began their work to rebuild an economy with local education institutions. Five core industrial areas of focus were established, taking a page from Michael Porter's (1998) strategy for economic advantage through **Clusters**. They were: Advanced Manufacturing, Value-Added Agriculture, Food Processing & Technology, Distribution & Logistics, and Healthcare and Medical Technologies. At the same time the Janesville Innovation Center was created to be an incubator for light manufacturing with contributions from both the City of Janesville, the Wisconsin Economic Development Corporation, and private foundations.

As this work emerged, a very important tool was utilized for this community and region, the ability to build public-private partnerships to secure better resources and strengthen factors of production. These partnerships would accomplish a great deal and have become almost a way of doing business for economic development in Janesville. Major projects such as expansion of I39/90 between the state-line to Madison, revitalization of downtown through ARISENow partnership, and the Woodman Sports and Convention Center, are all prime examples of the power of public-private partnership that embrace the concept of shared governance.

In Janesville's latest chapter, the traditional factors of production can be viewed as returning to its roots of the 19th century focused around land and location but with a mix of new technology. Rock County has established itself as an **advanced agriculture and food processing technology area** with major players like Seneca and Kerry Ingredients headquartered in Rock County. GEA, one of the world's largest system suppliers for food, beverage, and pharmaceuticals, selected Janesville to open its newest facility in the US in 2024. Distribution and logistics are a dominant industry with Dollar General opening a major distribution center in early 2017. These organizations, while not locally owned, share a corporate culture that embraces and supports the local community. While not all outside firms are as generous or involved locally, multi-generational local companies as well as small businesses represent a key part of the local economic ecosystem and usually have a higher level of community involvement pointing to Audretsch's focus on organizational **type of firm operating** in an area as important.

As firms grow and recruit, the region continues to identify that skilled and unskilled labor are critical, and again one sees public-private partnerships generate programs such as Craftsman with Character or the Janesville Business Academy as specific secondary education programs developed with our educational institutions and private sector to prepare our youth for the future.

Photo 3: "Black Hawk Mural" by Jeff Henriquez

Source: Photo courtesy of Drywater Productions.

And while Rock 5.0's vision for these strong clusters of industry play out, Janesville has embraced a strategy to proactively protect and enhance its quality of life for all, building upon its strength as Wisconsin's Park Place. Investments mentioned above in public private partnerships are joined by others ones such as a Children's Museum, a new Boys & Girls Club, an annual public art festival that has produced twenty large scale murals, and investments to William Tallman's original home and property at Rock County Historical Society are driving this community forward, recognizing that when a place is rebuilding creating "a sense of place" is paramount.

4. Conclusion

Today, former residents of Janesville who are returning after a long absence, share how much has changed. And while significant progress has been made, Janesville's average median income falls below the state average, and the local school districts face a growing student population whose families qualify for free and reduced lunch, an economic stress test. The growing use of critical social safety net not-for-profits confirms this trend. For the first time, the city has identified "increase median income" as an outcome measure on its most recently crafted strategic plan.

Opportunities and challenges lay ahead. A survey by the local chamber showed businesses ranked Janesville as a positive place to do business with 83% responding that the Janesville business environment enables growth. The same leaders, however, identified workforce development and housing as top concerns. Focusing on workforce as a key **factor of production** rises to the top as the primary challenge, a message that much of America is facing. And in this way, Janesville is a harbinger of many Midwest if not national trends.

While the elements within this multi-dimensional road map are not unique to Janesville, how leaders come together to act can be a defining moment for a place. In 2024, Janesville's relatively new city manager implemented a quarterly City Leaders forum. Every quarter, one sees the creation of social capital as not-for-profit leaders, elected officials, city directors, private business owners, and community advocates learn about, discuss and hatch new ideas to move this city and region forward.

Ferdinand Foch was the Supreme Allied commander on the Western Front in World War One, serving for over 55 years in the French military. He pointed not to cannons, nor bombs, nor rifles as the key to victory. He said passionately, "The most powerful weapon in the world is the human soul on fire."

And while Audretsch appropriately points to a multi-dimensional approach for placemaking, I would suggest as evidenced by this Janesville Case Study that without the human factor the other elements lose their potency or worse, leave a city without a playbook, for who writes the playbook but its citizens? If this stands true, it places a strong need for civic education on the responsibility of the local citizen, an area of personal interest and advocacy. I am thankful for the opportunity to participate in the prestigious Upton Forum for which the ideals of a liberal society are central, imparting an opportunity for individuals to experience freedom by building intellect and agency.

My own interest, work and research on placemaking began in earnest over a decade ago when I began to see the strong parallels between the tools of strategic planning and organizational development that shape organizations so profoundly and the tools needed for effective community building. My journey was accelerated by having a wonderful mentor and friend, Quint Studer, who parlayed his expertise in improving our healthcare organizations to improving his own city of Pensacola and wrote *Building a Vibrant Community* (2018). Impactful authors such as Richard Florida, Erik Klinenberg and Jane Jacobs among many have furthered my passion and education. In fact, an article by James Fallows in *The*

Atlantic many years ago gave me a powerful but simple eleven-point checklist for a thriving community that included having a local brewery. I would embrace his human centered approach.

In hindsight, my interest in placemaking was most likely set at an early age. As an Army brat, my "places lived" counted to sixteen with two on repeat by the time I turned seven. And while settled in Memphis, Tennessee by the 1st grade, my father, a recently hired pilot for a start-up called Federal Express, and my mother, the key copilot to a young nomadic family, instilled in our family a need for exploration and appreciation of other cultures. Those experiences left me with an understanding that not only did places vary dramatically, but that place had a profound impact on its inhabitants. And if so, then what is our responsibility to that place? And for this, I am so grateful for Professor David Audretsch's conceptual framework as not a theoretical exercise of academia but a personal gift which I hope to use through its vigorous application and to encourage others to do so for their community as well.

Most importantly I am grateful to the citizens of Janesville who have invited this interloper to find a home in this place and for so many not mentioned who have done so much. I look forward to looking back in twenty years to see the progress made.

References

Audretsch, David B., 2015. *Everything in Its Place: Entrepreneurship and the Strategic Management of Cities, Regions, and States*. New York: Oxford University Press.

Collins, James. 2001. *Good to Great: Why Some Companies Make the Leap… and Others Don't*. New York: Harper Business.

de Tocqueville, Alexis. 2000. *Democracy in America*. Chicago: University of Chicago Press.

Florida, Richard. 2002. *The Rise of the Creative Class*. New York: Basic Books.

Friedman, Thomas. 2005. *The World is Flat.* London: Lane.

Goldstein, Amy. 2017. *Janesville: An American Story*. New York: Simon and Schuster.

Goldstein, Amy. 2024. "Back to Janesville." *Brookings*. Available online at: https://www.brookings.edu/articles/back-to-janesville/

Jacobs, Jane. 1961. *The Death and Life of Great American Cities*. New York: Random House.

Janesville Citizens Development Committee. Estimated mid-1940s. "Janesville: The city in the country… a better home for industry." City of Janesville Planning Department.

Klinenberg, Eric. 2018. *Palaces for People: How Social Infrastructure Can Help Fight Inequality, Polarization, and the Decline of Civic Life*. New York: Crown.

Lauck, Jon. 2022. *The Good Country: A History of the American Midwest, 1800-1900*. Oklahoma University Press.

Porter, Michael E. 1998. "Clusters and the New Economics of Competition." *Harvard Business Review* 76, no. 6: 77–90.

Putnam, Robert D. 1995. "Bowling Alone: America's Declining Social Capital" *Journal of Democracy* 6 (January 1995): 65-78.

Studer, Quint. 2018. *Building a Vibrant Community: How Citizen-Powered Change is ReShaping America*. Janesville, WI: Be the Bulb Publishing.

An Audretschian View of a Local Phenomenon: The Knowledge Spillover from Beloit Corporation

Katie Arnold[1] **and Nick Lanpheer**[2]

1. Introduction

Beloit Corporation's bankruptcy is an important part of the history of Beloit, and in hindsight, is part of a larger pattern across the Rust Belt (also see chapter 6 in this volume on Janesville, Wisconsin). In the second half of the 20th century in the United States, manufacturing as an industry plummeted as business shifted overseas, and numerous strong, once-wealthy manufacturing giants fell past the point of return. It left many local economies reeling. The area known as the "Rust Belt" encompasses Ohio, Michigan, Wisconsin, and Illinois. Across this region, manufacturing decreased 19% in the late 1970s- mid 1980s and nearly one million jobs were lost as a result (Rhodes 2013: 56). Deindustrialization swept the Midwest, and took more than just jobs, but pride, wealth, and identity. Put plainly, "Deindustrialization, then, must be understood not simply as an economic process, but as a social and cultural phenomenon that reshapes places and identities" (ibid.: 57). Beloit Corporation was a papermaking manufacturing company, and while in the manufacturing industry, was progressing and even thriving well until the late 1990s, a decade or so after the Rust Belt deteriorated. After a mix of mismanagement and defaulted

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payments from customers, Beloit Corporation filed for bankruptcy in 2000.

Beloit Corporation fell from a peak of employing thousands to a valley of employing none, leaving ex-Beloit Corporation members to their own devices to decide what to do next. While devastating, very few pieces of literature decide to focus on the bright side of these cases – the people who did not fall idle, but helped forge another path forward. Like new plants growing out of the ashes of a barren volcano after an eruption, commonly referred to as "pioneer species," entrepreneurs can grow in even the most desolate environments as their own sort of pioneer species.[3]

In this paper, we argue that the bankruptcy of Beloit Corporation led to new firms in the same industry and in the same geographical place, thus viewed as a classic case of knowledge spillover. To begin, we describe the history of Beloit Corporation, a 100+ year old company, and its eventual bankruptcy. The literature will also include other examples and perspectives close to home, like the case of General Motors closing in Janesville, WI (see chapter 6 of this volume). Next, we present David Audretsch's theoretical framework of the knowledge spillover theory of entrepreneurship and how it relates to entrepreneurial efforts around the Beloit Corporation. In section three, we'll introduce our research and methodology, where we explain our qualitative data through interviews with ex-Beloit Corporation ("Beloit Corp") employees turned entrepreneurs. Then in section four, we expand on our findings and answer the question "Is Beloit Corporation's bankruptcy and resulting entrepreneurial activity a case of the knowledge spillover theory of entrepreneurship?" Finally, we conclude with a summary of our findings, illustrating that the bankruptcy of Beloit Corporation led to a knowledge spillover and resulted in new firms in the same industry and same place.

2. From Industrial Decline to Entrepreneurial Growth

To get a full picture of the situation, we relied on three books that chronicle the history of the Beloit Corporation and industrial history in southern Wisconsin, *The Earliest Forerunners of the Beloit Corporation* (n.d.) by Robert Hodge and Larry Ely, *Sacrificial Lamb: The Beloit Corporation Story: the Ex-Beloit Book* (2006)

3 For information on pioneer species, see Max Witynski's "Ecological Succession, Explained." University of Chicago News. Accessed November 21, 2024. https://news.uchicago.edu/explainer/what-is-ecological-succession.

by Luigi Bagnato, and *Janesville: An American Story* (2017) by Amy Goldstein. Hodge and Ely's (n.d.) comprehensive unpublished book about the early beginnings of Beloit Corporation helps set the scene for its ultimate dissolution. This is not a story about just any business; Beloit Corporation was the leading paper machine manufacturer that had global reach. Hodge writes, "Beloit had been the leader in product innovations at least since the 1920s, had accelerated that lead after World War II, and with the establishment of the Research Center in the 1950s, had continued to improve its position in relation to domestic machine makers" (n.d.: 203). The story of the Beloit Corporation is crucial to understand its dramatic fall from its peak; nobody thought "the Corp" was going out of business.

Once it did, however, former Beloit Corporation employee Bagnato (2006) authored a comprehensive book about Beloit Corporation called *Sacrificial Lamb* six years later. Bagnato reviews the inception of the company, the products Beloit Corp made, personal opinions, former employees of the company, reasons for Beloit Corporation's failure, and more. He unknowingly describes Audretsch's knowledge spillover theory of entrepreneurship in a paragraph titled "The People" saying,

> Although Beloit Corporation in its final hours left an endangered species, it was its greatest triumph. The ExBeloiters spread their experience, knowledge and work ethic around the world. It enriched their competitors and paper mills alike. They created new businesses like Paperchine LLC right in their own backyard… (ibid.: 10).

Thus, Bagnato's piece is pertinent to this paper.

Beloit Corporation employed as many as 7,700 people in the 1980s, spanning multiple countries and serving the majority of the paper industry. In fact, "an estimated 70% of the world's newsprint, writing, and printing-grade paper is produced on machines made by Beloit, as is an estimated 50% of the world's napkins, paper towels, and tissues."[4] Because of the vast number of machines globally, their spare parts business was lucrative and imperative for the maintenance (and continued productivity) of the machines.

4 "Beloit Corporation ." International Directory of Company Histories. *Encyclopedia.com.* Accessed October 14, 2024. https://www.encyclopedia.com/books/politics-and-business-magazines/beloit-corporation

In Beloit, the Beloit Corporation employed thousands of people, relying on both skilled and unskilled labor. The Beloit Corporation invested in human capital, their employee's knowledge and education, and a sizable number of employees went to top engineering schools. Beloit Corporation partnered with and sent employees to Georgia Tech, Milwaukee School of Engineering (MSOE), and Michigan Tech (Sennett 2024). The workforce that Beloit Corporation employed was highly knowledgeable and an important asset to the company and the community of Beloit.

Then, in 1986 Beloit Corporation was acquired by Harnishfeger for $175 million, or approximately $500 million (half a billion) in 2025 dollars. The company experienced some of its best years immediately following the acquisition. Bagnato writes,

> In the years of 1996 and 1997, Harnischfeger Industries had record earnings. The company stock traded in the $40 to $50 range per share. Harnischfeger Industries was known for high-quality products with a reputation for good service. Its papermaking-machine subsidiary, Beloit Corporation, was considered the market leader in North America…Harnischfeger appeared on a list of the world's top 50 of 1650 Blue Chip stocks studied. It ranked with companies like Coc[a]-Cola, Disney, General Electric, Hewlett Packard, Nike and Intel, to name a few (ibid.: 156).

Yet, its success could not be sustained. After questionable management decisions and a $300 million default by Asia Pulp and Paper Co. Ltd. (around the time of the Asian Financial Crisis), Harnischfeger fell down a slippery slope towards Chapter 11 bankruptcy, eventually filing in June 2000. Bagnato explains,

> In the waning years of the 20th century, the U.S. was in an unheard of economic boom. Contrary to this boom, the paper machinery sector was in a cycle of weak pricing and over capacity. The mining industry had similar problems. Coal mining equipment demands were at a low cycle and copper prices were falling. Typically these cycles will come at different times, sometimes as much as a couple years between the bottoming out of various sectors of the economy. Unfortunately for Harnischfeger and its employees, things

> were different this time around- the low cycles coincided. This phenomena, coupled with its poor financial condition was more than Harnischfeger could handle (ibid.: 156-7).

What do cities do after the closure of such a prominent employer? How do former-employees, residents, and city officials (to name a few groups) navigate the future? In *Janesville: An American Story* (2017), Amy Goldstein presents a parallel story about the closure of the General Motors plant in Janesville, WI in 2009. Goldstein embedded herself in Janesville and interviewed many impacted by the plant closure. She then follows the lives of a handful of families who are navigating the aftermath – for example, going back to technical school, or seeking employment in nearby (and not so nearby) cities. There are similarities between the City of Beloit and the City of Janesville: how these companies – the Beloit Corporation and General Motors - put their respective cities on the map, how the city operated according to the business, and how the company was a major, if not the largest, employer in town. In both cases, civil society has had to organize to meet the challenge and begin charting a path forward.

One difference in the City of Beloit is the efforts of Diane and Ken Hendricks. In fact, in 2017 *The New York Times* ran an article entitled "In Weary Wisconsin Town, a Billionaire-Fueled Revival." The article tells the story that Diane and Ken Hendricks initially went to Janesville in search of a bank loan to purchase a dilapidated sugar beet mill, but were turned down. Hendricks remembers, "The banker said, 'We don't do business with entrepreneurs, and we don't want your business'" (Stevenson 2017). The couple were able to secure a loan in Beloit and then have devoted their time, talent, and treasure in the City. This short anecdote reveals the importance of entrepreneurs in a city or town; not only do they drive innovation and growth, but they also may choose to give back to the place where they made their fortune, intertwining place as an integral part of entrepreneurship.

Entrepreneurs Diane and Ken Hendricks made a major investment in Beloit in 2001, purchasing the property that had been home to the Beloit Corporation. Also in 2001, CNN Money published an article "Hard Times in the Heartland: The Fallout from Layoffs? Visit the Entrepreneurs of Beloit, Wis., Who are Scrambling to Make Sense of the Town's Economic Turmoil" by David Whitford. The article served as our main discovery point about the resulting entrepreneurs that came from Beloit Corporation. Whitford interviews the suppliers to Beloit

Corporation and their unheard grievances and former employees turned entrepreneurs, and he visits the physically empty space that Beloit Corporation once occupied. The article sheds light on the rare post-Beloit Corporation afterlife, where the employees and suppliers had to pivot. This perspective is foundational to this paper because of its direct relation to the knowledge spillover theory of entrepreneurship. In our methodology, we chose to mimic Whitford's approach and reconnect with the entrepreneurs today, 23 years later.

In his knowledge spillover theory of entrepreneurship, Audretsch argues that firms discover new knowledge through investing in research and development, and that new knowledge is discovered and used by employees of the firm. The employees at the firm thus have this knowledge, as it is a non-excludable and non-exhaustible good and can propose new ideas about how to commercialize this new knowledge. Audretsch explains that the firm cannot commercialize all of the knowledge effectively; not all ideas put forth by the firm's employees are commercialized due to "high uncertainties, asymmetries, and transaction costs," which Audretsch coins as the "knowledge filter" (Audrestch, Keilbach, and Lehmann 2006: 41). This knowledge filter leads to gaps, in which the potential idea and profit sit unrealized until an entrepreneur decides to commercialize it on their own. Knowledge spillover thus occurs when the entrepreneur takes the knowledge gained in one place and exploits it, starting his/her own endeavor. This is the underlying theory for our research: in this case, it is forced knowledge spillover (with Beloit Corporation's closure forcing thousands of people to pursue other opportunities), and the cases of some who pursued entrepreneurial ventures.

Closely related to the knowledge spillover theory of entrepreneurship, Audretsch has written on economic clusters, defined as geographic concentrations of businesses, interconnected between their inputs and outputs, and which benefit from collaboration and knowledge spillover. Some examples of these include Silicon Valley, or Boston's Route 128, which thrive on the proximity of large corporations, and elite talent. This examination is of Beloit, Wisconsin. Beloit is home to a small, liberal arts institution, Beloit College. The College has the potential to increase human capital in the city; however, the scale is much smaller than Stanford University (Silicon Valley), Harvard University, or MIT (Route 128).

At the time of Beloit Corporation's closing, Beloit's struggling economy could be compared to others' in the Rust Belt. "Not long ago, Beloit's economy was ugly. Like many American cities — Detroit, Youngstown, Gary — it had fallen victim to the damage that is wrought when one major industry vanishes from

town, reversing local fortunes" (Stevenson 2017). Beloit College Professor Emeritus Jeff Adams recalls that Beloit's downtown was bleak and consisted of "decayed, bombed-out buildings" (ibid.). Like Stevensen says, Beloit was not unique to this hardship; several cities, particularly along the Rust Belt, felt the effects of deindustrialization in the late 20th through early 21st century.

According to the literature around the recovery of de-industrialized communities, human capital is an important factor in how communities will fare in their recovery (Gagliardi, Moretti, and Serafinell 2023). The authors state,

> We find that one important factor that raised the probability of recovery was the initial level of residents' human capital. Cities that had a high share of college graduates in the labor force in the year of their country's manufacturing peak experienced faster total employment growth compared to cities in the same country that had the same initial share of local manufacturing employment but a low share of college graduates (ibid.: 30).

A particularly relevant example is Pittsburgh, Pennsylvania. Pittsburgh, famously known for steel manufacturing, suffered major losses during the late 20th century as U.S. steel declined; Western Pennsylvania essentially experienced a "second great depression" with an unemployment rate of 18% (Andes et. al 2017). Yet, its clusters of advanced industries, such as manufacturing, technology, and health care, along with their highly renowned education institutions, University of Pittsburgh and Carnegie Mellon University, have allowed them to recover (ibid.). "The competitive advantage of the region is no longer its rivers and raw materials but high skilled workers, world-class research institutions, and advanced manufacturing" (ibid.). Pittsburgh is looked upon as a "Rust Belt renaissance city" and the literature states a highly-skilled workforce has contributed to that (ibid). And while Beloit is not typically regarded as a "knowledge rich" location, Beloit Corporation itself had a knowledgeable workforce.

In our interview with former Beloit Corporation employee Steven Sennett, he recalled that there was a co-op established by E.J. Justus, the VP of Engineering at Beloit Corporation, who happened to be a Georgia Tech alumnus. Beloit Corporation had partnerships with Milwaukee School of Engineering, Michigan Tech, and Georgia Tech. The co-op stated that enrolled students would work in the factory in a rotation with the school's quarterly system (i.e., work for three

months, school for three months, repeat) and then would be guaranteed a job after completion. Justus eventually was replaced as VP of Engineering, but his efforts to secure this co-op with engineering schools led to a disproportionate number of engineering graduates at Beloit Corp. Why does this matter? Georgia Tech is highly renowned for its engineering program, ranking in the nation's top ten engineering institutions with a notable reputation as a "global leader and innovator."[5] Thus, while the physical city of Beloit may lack in college graduates in its overall workforce, which is what Gagliardi et al. (2023) point to as a crucial indicator for deindustrialization recovery, the human capital of Beloit Corporation makes up for this discrepancy.

In fact, research supports a link between engineering and entrepreneurship. In a survey with data going back to the 1800s, Baumol, Schilling, and Wolff (2009) find that most entrepreneurs and inventors are likely to have an educational background in engineering. Whether an inventor, entrepreneur, or simultaneously an entrepreneur and inventor, the number one educational background was in engineering (ibid). This study is particularly relevant to our argument because the entrepreneurs in this paper had an education in engineering, and simultaneously supports Baumol et al.'s (ibid.) findings.

3. Methodology

Because we are examining a local phenomenon, we have access to first-hand accounts from ex-Beloit Corporation employees. Three interviews with ex-Beloit Corporation employees were conducted to support this paper. First-hand accounts shed light on what the peer-reviewed scholarly articles and published books did not; they are real, unfiltered accounts of people who were on the ground, experienced the events themselves, saw opportunities appear, and decided to act on them. As Bagnato (2006: 10) says, "One only has to review the messages posted by the ExBeloit species on the ExBeloit Worldwide Network to better understand…some messages are poignant, some encouraging, a few a little whiny but most are encouraging. They are stories of accomplishments and recovery and the act of going on with their lives, showing very little bitterness if any." And while this ExBeloit Worldwide Network is no longer available, former employees still

5 "Facts and Rankings." College of Engineering . Accessed February 21, 2025. https://coe.gatech.edu/about/facts-and-rankings.

reside in the Beloit area, thus providing an opportunity for interviews about their experiences both at "the Corp" and after.

We were able to locate entrepreneurs to interview based on the reporting in Whitford's (2001) article. In this way, the sample that we have is not random. However, the information contained in our sample is still meaningful to illustrate that the knowledge spillover theory of entrepreneurship can be found in these scenarios. The three firms (and interviews that we conducted) are: Paperchine, GT Flow Technology, and the special case of Beloit Manufacturing Company, of which the capitalization of knowledge spillover began before Beloit Corporation's bankruptcy.

In our interviews, we asked a standard set of questions that covered three general areas (1) when did they start at the Beloit Corporation, and what was their role there, (2) their experience of the closure of the Beloit Corporation, and (3) the story of their business today – when they started, how they saw the opportunity, and other details. We did conclude the interviews with the question "is there anybody else you think we should talk to?" which is a good practice to supplement identified interviewees with further potential interviewees (this method of locating other sources is called "snowball" sampling).

We asked these questions to gain information about Beloit Corporation as the person experienced it, along with their opinions. After discussing these initial questions, we asked more tailored ones to their situation, usually around their business. We interviewed Steven Sennett, formerly employed by Valmet; Gene Neill and Tom Rogers, former business owners of G.T. Flow Technology; and Laurie Wicks, former President and co-founder of Paperchine. In the next section, we discuss our interviews and conversations with the aforementioned entrepreneurs and how they exemplify Audretsch's knowledge spillover theory of entrepreneurship.

4. Beloit Corp. to New Ventures: Evidence of Knowledge Spillover

Paperchine was founded in the spring of 2000, the same year Beloit Corporation went bankrupt. The company is described as "providing service and parts for paper-making machines, with an engineering and service staff, which often travels to paper manufacturers around North America to repair or make upgrades to their machines" (Gavan 2013). The former Paperchine President, Laurie Wicks, was an

ex-Beloit Corporation employee who had worked his way up to being the Vice President of North America Operations. He had started at Beloit Corporation through the company's aforementioned co-op program with engineering schools, Wicks himself graduating from Georgia Tech with a mechanical engineering degree. Wicks later attended UW-Madison and then Stanford, all of which was funded by Beloit Corporation.

In an interview with Mr. Wicks, he describes the six-month window of opportunity where he was able to invite top talent from Beloit Corporation to start a business. While uncertainty still loomed as to whether Beloit Corporation was going to continue operations, and while Valmet was looking into buying Beloit Corporation, Wicks recruited key employees to join his business venture, later to be called Paperchine. Three key former Beloit Corporation employees, James Ewald, Daniel Morris, and Larry Voss, joined Wicks as the co-founders. Wicks recalled taking the cream of the crop in finance, manufacturing, and engineering from Beloit Corporation, pooling a sum of money together, and figuring out the rest as they went. Wicks recalled that they had a number of employees on the payroll before even having an office to work in. This leads to the heart of Wicks' story: the people. Wicks recruited some of the best salesmen, finance employees, service people, and engineers to Paperchine. From its official start of 41, Paperchine grew to a company of 125 at its peak, employing a significant number of people. As we just discussed, a portion of these positions were to former Beloit Corporation employees, but nevertheless created an impact as a result of this entrepreneurial endeavor.

They may not have had the patents to the paper-making machines, but they had the people who created the drawings for the machines. Paperchine's most important asset was its human and social capital. The salesmen had rapport with Beloit Corporation's clients, and their engineers were subject matter experts recognized by paper mills. Wicks says, "We built the business on the people we had" (Interview with Wicks November 11, 2024). Many had gone through the co-op program themselves, leading to a highly educated workforce. A key insight from Mr.Wicks that supports Audretsch's knowledge spillover theory of entrepreneurship is as follows: "[Wicks] said there were a lot of good people who worked for Beloit Corp. who were knowledgeable in the paper industry and who didn't want to leave the area" (Whitford 2001). Wicks continued, "The only option was to form our own company" (Interview November 11, 2024).

Paperchine capitalized on the opportunity that Beloit Corp left upon its

demise: thousands of its paper-manufacturing machines needed repairs, parts, and maintenance as they continued to operate while Beloit Corp did not, requiring special information and services that could best be supplied by former employees of the company (ibid.). Paperchine, Wicks said, started with around $2 million in funds that were mostly borrowed or put up by the original four founders. What's more, this $2 million was secured by their personal property, meaning this was a risky move with the possibility of losing more than just money, but personal assets. It was an endeavor they needed to succeed and succeed they did. After their first year in operation, they had done $7 million in business. Thus, a successful company was born out of the knowledge spillover that the ex-Beloit Corporation employees used to create their new firm within the same industry, Paperchine.

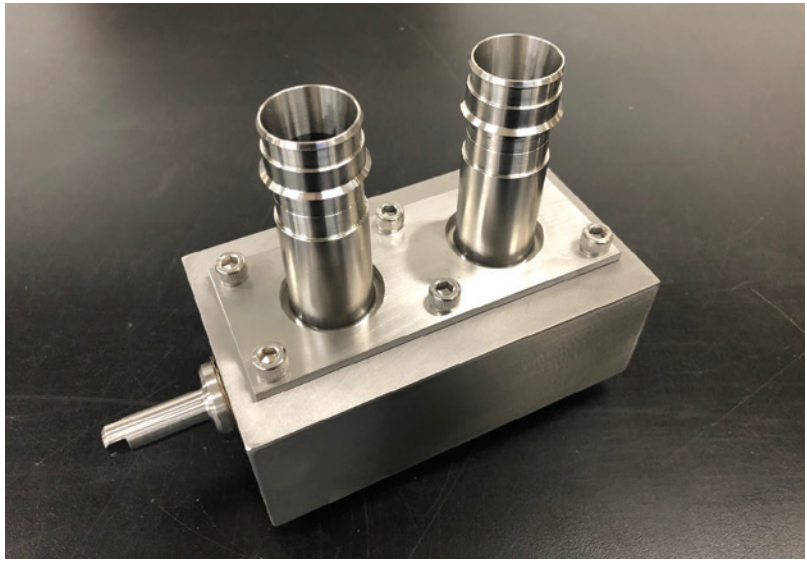
Another entrepreneurial venture was established around the same time. Gene Neill and Tom Rogers started their own business, GT Flow Technology in 2000. Neill graduated from Milwaukee School of Engineering, and Rogers went to Bradley University and graduated with a degree in mechanical engineering. Neither of them were part of Beloit Corporation's co-op program, but still had educational backgrounds in engineering. Neill and Rogers both settled in the area after getting hired by Beloit Corporation and stayed for many years. After seeing the company in decline, they decided to start their own business. Rodgers recalls, "We didn't know anything about shipping, or arranging trucks or transportation, or international paperwork…I mean even the accounting side and some of the financial practices and whatnot…we had to do everything…we were our own attorneys, we wrote our own documents, we did whatever it took" (Interview November 4, 2024). Neill chimes in, "Yeah, we did whatever needed to be done. We were it" (ibid.). Their business, G.T. Flow Technology, focuses on consumables, or pieces that needed to be replaced regularly. Neill puts it plainly, "We had two choices. We could go out and find other jobs with big companies, or we could try this" (Whitford 2001). Rogers and Neill had extensive knowledge in one part of the paper making machine and even designed their own parts as they went along.

While still working at Beloit Corporation, Neill recounts,

> I came up with a design for this real speciality valve…and it was pretty unique. What I did is I studied a lot of valves, and I kind of put my own valve package together and we tested it in our research facility, and it worked fantastic. But I couldn't get the company- they said 'well, it's just a valve, we're not going to waste our time patenting

> that'... so we said fine. And so when we started our own business, we took that valve and actually improved it a little bit, and started selling them, and pretty soon we sold hundreds, probably into the thousands…we sold a lot. It was very popular (Interview with Gene Neill November 4, 2024).

Photo 1: Valve invented by Gene Neill



What Neill is describing in this scenario is exactly what Audretsch describes as the "knowledge filter." An employee creates something new and the firm, due to "high uncertainties, asymmetries, and transaction costs," does not capitalize on the invention, leaving it fair game for entrepreneurial employees to act on it, exactly as Neill and Rogers did. After putting their homes up as collateral to fund the startup, they accumulated $360,000 during the first nine months in operation. They were able to pay back what they owed and pay themselves, and sales increased there afterwards (Whitford 2001). Rogers explains, "The last 10 years of our business, our best customers were Paperchine- a lot of our competitors turned out to be our best customers, partly because we learned how to work together for the mutual benefit of both. And so if a competitor was short on materials, and they had a job, they'd come to us…and then the next time when we needed something, they came back to us. In the end, we were very friendly and supported

each other" (Interview November 4, 2024). GT Flow Technology has averaged 5 employees across its lifetime, with a recent peak of 8, increasing employee positions after an increase in demand.

The third example of the knowledge spillover theory of entrepreneurship linked to the Beloit Corporation is Beloit Special Machining, which was founded in 1978 by Steve Meade and John Jensen. Both were at the Beloit Corporation and then left to found their own venture. Dayton Oliver, who is the grandson of a former Beloit Special Machining employee and is now the Operational General Manager of GT Flow Technology, says, "The Corp had so much work, that they had to start outsourcing it…so they were running casting and all sorts of stuff for the Corp for years. And then the Corp went under and that was like… 30-50% of their business was coming from the Corp." Oliver continues, "From what I know, they filed bankruptcy as well at some point and had to go find work in Chicago…they were traveling around in all sorts of places. They're still pretty prevalent in the paper industry, but not as [much as] they were" (Interview with Dayton Oliver November 4, 2024). Yet, Beloit Special Machining was able to survive while its larger counterpart could not and still operate in Beloit today.

Photo 2: The inside of Beloit Special Machining (November 2024).

There are bright sides to being small. Neill and Rogers both agreed that being smaller allowed them to be better to their customers, with Rogers saying,

> Beloit Corp was 8,000 employees, and a customer would call and have a problem, and they would get handed off multiple times...they would call G.T Flow, and either Gene and I would answer the phone, and they would ask multiple questions about schedule, about technical stuff, and we'd say 'well I can answer that.' They were so surprised that we were able to respond and make changes on the phone… they were so happy we were able to be so flexible and quick to respond compared to a big company (Interview November 4, 2024).

Laurie Wicks particularly enjoyed being able to run his own business. He recalls that when Beloit Corp went under, he was in his fifties. Wicks recognizes that he didn't really appreciate the risks he took on when he embarked with Paperchine, he just knew it had to work. But when asked if he'd do anything differently, he shook his head. He wouldn't have done anything differently after experiencing the thrill of running his own business.

Neill, Rogers, and Wicks are correct- there is beauty in small. Small businesses are better suited to pivot in times of hardship, and the personal connections are often deeper and stronger (Barr 2023). And to Wicks' point- there is pride in seeing one's own sweat, tears, and start-up money grow into something beyond one's wildest dreams. Where there is risk, there is certainly reward.

These case studies of entrepreneurs who created something from the knowledge they took from their years at Beloit Corp prove that the knowledge spillover of entrepreneurship can be applied to local examples. As Whitford (2001) puts it best,

> ...when a factory shuts down--sadly, a phenomenon that more and more communities are bound to experience--the minds around it open up. That's why Beloit today is teeming with consultants who are selling the knowledge they acquired at Beloit Corp. And it's why the small companies that once fed off the Corp. aren't, for the most part, content to preside over their own deterioration. Whatever drove those entrepreneurs to start companies in the first place now drives them to take risks to ensure their future prosperity…entrepreneurs don't stop moving.

Whitford is right: these entrepreneurs are using the assets instilled in them by a large corporation, like their formal education at leading engineering schools or their technical experiences on the factory floor, to pivot from a tragic loss. This is at the very heart of knowledge spillover, using the non-exhaustible and non-excludible attributes that are inherent characteristics of knowledge in order to start one's own endeavors. Paperchine, GT Flow Technology Inc, and Beloit Special Machining are all ex-Beloit Corp members that exemplify this theory, leading to a small cluster of paper machine parts manufacturers in the Beloit area. The bankruptcy of Beloit Corporation facilitated new firms being created in the area, viewed as a knowledge spillover that came from Beloit Corporation investing in their labor force's education, chiefly in engineering.

5. Conclusion

In a poetic ending to the story, the empty halls of Beloit Corporation's office exist as an entrepreneur incubation center for local businesses and tech startups. The campus was renovated by Diane and Ken Hendricks with an overall objective "to 'Build Beloit' by cultivating the community's entrepreneurial ecosystem."[6] A small midwestern city that once depended on manufacturing- which can also be observed in the case of Janesville, Beloit's neighboring city that lost its manufacturing messiah, General Motors, pivoted to diversify its industry, and now a space dedicated to encouraging new endeavors exists in the very walls of a manufacturing plant. In a roundabout and unforeseen happenstance, a company that was once the heart of Beloit, employing thousands and spanning worldwide, went through an unfortunate bankruptcy that would later would become home to entrepreneurs in the same state, city, and even building.

In conclusion, the closure of Beloit Corporation led to entrepreneurs seizing the opportunity and embarking on their own business adventures. And while there are surely some failed attempts, we highlight three case studies of businesses that not only survived, but thrived without the umbrella of the Beloit Corporation. These entrepreneurs had to adapt. Like Neill and Rogers, some were forced to become accountants, lawyers, marketers, designers, among many other roles, all at once. In this scenario, they all have one thing in common: where they came

6 "About: Irontek: Beloit, WI Coworking & Start-Up Incubator." Irontek. Accessed November 21, 2024. https://www.irontek.co/about.

from. Audretsch's knowledge spillover theory rings true in this small, deindustrialized city in the Midwest, refreshed by entrepreneurs who decided to bring about change themselves. Resilience, bravery, intelligence, and maybe a touch of delusion aided these entrepreneurs to become successful businessmen, all of them taking their knowledge supplied by "the Corp" and turning it into something more. Thus, our argument of the resulting knowledge spillover of Beloit Corporation has been proven true due to the development of three small businesses, all founded by ex-Beloit Corporation employees.

References

Andes, Scott, Max Horowitz, Ryan Helwig, and Brad Katz. 2017. *Capturing the Next Economy: Pittsburgh's Rise as a Global Innovation City.* Brookings Institution—The Bass Initiative on Innovation and Placemaking.

Audretsch, David B., Max C. Keilbach, and Erik E. Lehmann. 2006. *Entrepreneurship and Economic Growth*. New York: Oxford University Press.

Bagnato, Luigi. 2006. *Sacrificial Lamb: The Beloit Corporation Story: the Ex-Beloit Book*. U Build A Book.

Barr, Charles. "How Small Businesses Can Compete and Succeed Against Large Companies." LVRG BUSINESS FUNDING, October 20, 2023. Available online at: https://www.lvrgllc.com/blog/how-small-businesses-can-compete-and-succeed-against-large-companies#:~:text=By%20focusing%20on%20a%20cohesive,the%20personal%20to uch%20and%20individuality. (Accessed November 2024).

Baumol, William & Wolff, Edward & Schilling, Melissa. 2009. "The Superstar Inventors and Entrepreneurs: How Were They Educated?" *Journal of Economics & Management Strategy*. 18:711-728.

"From Beloit Iron Works to Beloit Corporation." Beloit Historical Society. Available online at: https://www.beloithistoricalsociety.com/ironworks.php. (Accessed October 11, 2024).

Gagliardi, L, E Moretti and M Serafinelli. 2023. "The World's Rust Belts: The Heterogeneous Effects of Deindustrialization on 1,993 Cities in Six Countries". NBER Working Paper 31948

Gavan, Hillary. "Paperchine Co-Founder to Retire in September." Beloit Daily News. July 22, 2013. Available online at: https://www.beloitdailynews.com/uncategorized/paperchine-co-founder-to-retire-in-septe mber/article_5be45e9c-024d-5e56-ab4b-1efb0e376c5a.html.

Goldstein, Amy. *Janesville: An American story*. 2017. New York: Simon & Schuster Paperbacks.

Hodge, Robert and Ely, Larry. n.d. "Earliest Forerunners of the Beloit Corporation". Unpublished.

Neill, Gene and Rogers, Tom. 2024. Interview by authors. Beloit. November 4, 2024.

Oliver, Dayton. 2024. Interview by authors. Beloit. November 4, 2024.

Rhodes, James. "Youngstown's 'Ghost'? Memory, Identity, and Deindustrialization." *International Labor and Working-Class History*, no. 84 (2013): 55–77. http://www.jstor.org/stable/43302727.

Sennett, Steven. 2024. Interview by authors. Beloit. October 7, 2024.

Stevenson, Alexandra. "In Weary Wisconsin Town, A Billionaire-Fueled Revival." The New York Times. August 5, 2017. Available online at: Available online at: https://www.nytimes.com/2017/08/05/business/dealbook/beloit-wisconsin-revival-diane- hendricks.html.

Whitford, David. "Hard Times in the Heartland the Fallout from Layoffs? Visit the Entrepreneurs of Beloit, Wis., Who Are Scrambling to Make Sense of the Town's Economic Turmoil." CNNMoney, November 1, 2001. https://money.cnn.com/magazines/fsb/fsb_archive/2001/11/01/312466/index.htm.

Wicks, Laurie. 2024. Interview by authors. Beloit. November 11, 2024.

Wolf, Clint. "25 Years Later, Community Reflects on Demise of Beloit Corp." *Beloit Daily News*, July 2, 2024. Available online at: https://www.beloitdailynews.com/news/business-news/25-years-later-community-reflects-on-demise-of-beloit-corp/article_d0072156-37b5-11ef-8837-eff7959d09d8.html.

People, Places, and Social Change

By Stefanie Haeffele[1] and Laura E. Grube[2]

1. Introduction

David Audretsch's research program is fundamentally tied to the central question of political economy, that is, why are some countries, regions, or cities prosperous, while others remain poor? This is the question that Adam Smith took on in *An Inquiry into the Nature and Causes of the Wealth of Nations* ([1776] 1982) and that still motivates political economy scholarship today. In the 18th century, Smith observed that even those in the lowest ranks of wealthy societies were better off than the nobility of the poorest societies. How could this be so? Smith's answer is that the division of labor brought about increases in labor productivity that have generated wealth orders of magnitude greater than before, and that the expansion of the extent of the market, through globalization, continues to expand productivity, innovation, and progress. People, who hone their expertise and find new ways to provide needed goods and services, are at the center of his story of growth. Smith also cautions, however, that this unforeseeable growth was made possible because of the adoption of good governance practices – "peace, easy taxes, and a tolerable administration of justice." Like Smith, Audretsch's answer to this central question is human capital, emphasizing the relationship between labor (human capital) and knowledge, and how entrepreneurs are or are not able to effectively make use of new ideas to spur innovation.

Audretsch's theory of entrepreneurship, known as "the knowledge spillover theory of entrepreneurship," points to the phenomenon in which ideas are created in one context and then are commercialized in another (Audretsch et al. 2006).

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In other words, they spill over from their discovery point to another location or application, via entrepreneurs who identify the opportunity and push it forward to adoption and implementation. The idea may originate from the private sector or a large university and, for whatever reason, goes unexploited. This is known as the "knowledge filter," wherein some ideas make it through the filter to implementation and others remain unexplored or forgotten (ibid.). An enterprising employee, student, or colleague, however, may realize the potential and utilize it for a new venture, spinning off from the original point of discovery. These kinds of spillovers tend to happen in proximity to each other, reinforcing the idea that innovations occur in geographic clusters. Take, for example, how two ambitious entrepreneurs, Steve Jobs and Steve Wozniak, visited Xerox Corporation's Palo Alto Research Center (PARC) in the 1970s and learned about their developments in personal computing and the graphical user interface (GUI). Where Xerox was not ready to implement these ideas, they saw their potential, and Apple Computer is now a household name.

The economics of place is, therefore, unsurprisingly another important area of Audretsch's (2015) research. Places like Palo Alto, California, allowed for researchers and entrepreneurs to work and debate ideas together and to engage in deliberate human coordination. According to Audretsch (ibid.), the economic success of a particular place (at a particular time) is determined by a variety of factors, including: (1) factors of production and resources, (2) spatial and organizational dimensions, (3) the human dimension, and (4) public policy. While there may be a sense of serendipity to a thriving geographic center, intention and governance is also important. As such, Audretsch (ibid.: 9) utilizes the German language word, *standortpolitik* – or "strategic management of place" – to examine how particular places spur entrepreneurial activity.

Audretsch advances a nuanced and profound concept of entrepreneurship and economic progress – articulating how knowledge is discovered, articulated, transmitted, and ultimately implemented in a particular context and time. As such, we argue that his work should be recognized as sitting firmly within the tradition of Austrian economics, which emphasizes that knowledge is inherently local and decentralized and market activity is a continual process of entrepreneurial action. This grounding allows for a place-based view of social change that has practical implications for policy and our understanding of social wellbeing.

In the next section, we connect Audrestch's theories with the contemporary contributions from the Austrian school of political economy to create the

"Audretschian-Austrian entrepreneurial framework for social change." Next, we turn to an empirical study of social change and present a case study using this framework. The case study examines entrepreneurship in post-disaster recovery. We then conclude and consider possible policy implications.

2. Audretschian Theories of Entrepreneurship and Place

As Audretsch describes (in this volume, chapter 2), entrepreneurship as an explanation for economic development started to gather momentum in the 1980s and 1990s. This emphasis on entrepreneurship is linked to endogenous growth theory, or the argument that economic growth is the result of factors within a system (e.g., human capital and innovation), rather than factors outside the model (e.g., capital accumulation and population growth). While there is a consensus in the literature that "entrepreneurship is concerned with the discovery and exploitation of profitable opportunities" (Venkataraman 1997: 15), much of the literature emphasizes different types of entrepreneurship and different ways that entrepreneurship comes about. For example, Audretsch et al. (2006: 34) states that one approach to understanding entrepreneurship "holds the context constant and then asks how the cognitive process inherent in the entrepreneurial decision varies across different individual characteristics and attributes." These characteristics and attributes may be preferences toward risk, a desire to be one's own boss, or access to different types of financial, social, and physical capital.

Audretsch's theory of entrepreneurship, on the other hand, holds the individual characteristics of entrepreneurs constant across varying contexts. He and co-authors explain, "entrepreneurship is an endogenous response to opportunities generated by investments in new knowledge made by incumbent firms and organizations, combined with their inability to fully and completely exhaust the ensuring opportunities to commercialize that knowledge" (ibid.: 35). This is known as the "knowledge filter" – opportunities need to be perceived as opportunities and, often, they can get overlooked in the contexts they originally occur in. As was the case at Xerox, a company focused on photocopying technologies, where advances in computing were discovered but not recognized as revolutionary innovations until noticed and carried forward by Apple. Through knowledge spillovers, from researchers learning from one another, the opportunity was still exploited even though Xerox was not the right place for those ideas to take off. This happens because, as Audretsch and co-authors explain, "divergences in education,

background, and experience can result in a divergence in expectations about the expected value or the variance of the outcomes so that the recognition evaluation and therefore the motivation of pursuing these opportunities differ across economic agents and decision-making hierarchies" (ibid.: 41).

Within Audretsch's theory of entrepreneurship, he stresses the role of a "knowledge rich context," or an environment where people are engaged in research and development, exploring new ideas, and importantly, interacting with each other to share ideas, solve problems, and provide feedback (ibid.: 45). The knowledge rich context includes a variety of different types of organizations, such as high technology firms, firms of varying sizes, and importantly, universities and other research institutions. These organizations are especially fruitful when clustered together in geographical areas – such as Silicon Valley – with social networks that facilitate information exchanges and where people can move from firm to firm, facilitating knowledge spillover as they interact. The entrepreneur is the actor in the ecosystem that sees an opportunity and acts on it. It is unsurprising that these places, with knowledge rich contexts, have an abundance of entrepreneurs, start-ups, and innovations.

Culture also influences the rich context of entrepreneurship. Audretsch has written extensively on entrepreneurship across various countries and cultures. For example, Audretsch and Lehmann (2016) explore entrepreneurship in Munich, Germany, where the economy transitioned from agriculture to industry and technology by leveraging human capital and universities. They highlight the importance of small firms, public infrastructure, education, and adaptability which allowed Germany to embrace global opportunities. Further, Audretsch and Vivarelli (1996) explore how university knowledge spillover tends to benefit smaller firms in Italy, which might seem paradoxical to the American emphasis on big business. Given that Audretsch's theory of entrepreneurship is so closely tied to context and culture, it makes sense that he would turn to the importance of place – particularly, why some places (e.g., cities, regions, countries) tend to ignite innovation and are more economically successful than others.[3]

Everything in Its Place (2015) presents his framework of "the strategic management of place," connecting the literature on economic development and urban planning. He provides background history of thought, explaining that in

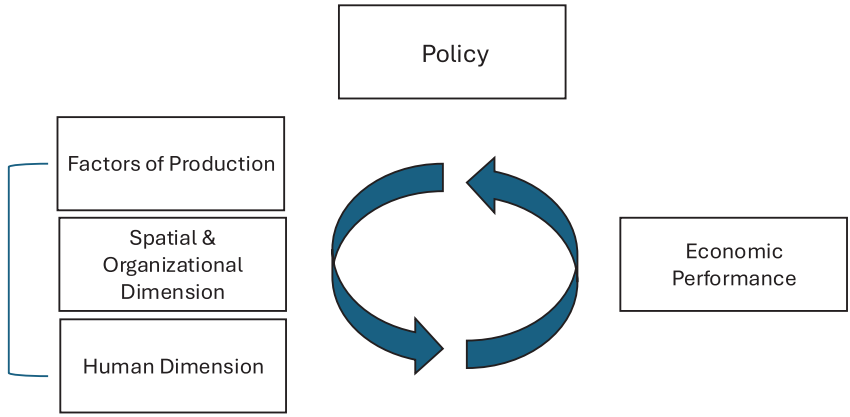
3 This is not to say that the other type of scenario that Audretsch describes in chapter 2 of this volume – the entrepreneurship for a place – is not also possible.

the mid-20th century, a successful economy was largely based on the success of large companies that were engaged in large scale manufacturing, with impressive factories, and the required extensive labor force. Think of the success of General Motors in Detroit, Michigan, which at one time was synonymous with the economic health of the United States (ibid.:15). In hindsight, this was an artifact of WWII and would not last. The globalization that characterized the second half of the 20th century came with "the demise of the singular strategy" (ibid.: 21). And with it, Detroit became a place of hardship rather than opulence and hopes for revitalization remain cautiously optimistic.

Researchers and practitioners across many fields – economics, sociology, regional studies, management, among others – have contributed to our understanding of why some cities are successful and others are not. Audretsch (ibid.: 23) has synthesized these insights, stating that they, "provide the basis for identifying and articulating the underlying forces shaping and influencing the performance of a place, along with what a place in turn can do to influence those underlying forces." He presents a framework of the strategic management of place with four dimensions: (1) factors of production and resources, (2) spatial and organizational dimensions, (3) the human dimension, and (4) public policy.

For Audretsch, "factors of production and resources" is a large category that includes the natural resources found in a place (e.g., rivers, mountains), physical capital (e.g., infrastructure), and human capital (e.g., the workforce and universities). However, how these resources and factors are organized is also important – that is the second dimension. Are there a few large firms or many small firms? Are they clustered together or spread out across the region? Are there social networks that facilitate the exchange of ideas and human capital or partnerships that make use of complementarities? Or are firms insular and non-compete clauses common? This directly feeds into "the human dimension" which, for Audretsch, includes social networks, social and economic norms, the image and narrative of a place, and leadership. These three dimensions work together under policies that support economic growth for economic progress to flourish. For how these four dimensions connect, see figure 1.

Figure 1: Framework for the Strategic Management of Place



Source: Audretsch (2015: 24)

Audretsch et al. (2023) has applied this framework in the edited book, *The Strategic Management of Place at Work*, that examines several cities that have engaged in revitalization projects as well as why some cities are in decline. For example, Detroit's decline is tied to the 2008 Great Recession, which saw the bankruptcy of General Motors. The authors point to efforts to establish greater ties between universities and industry and deliberate investments to counter the negative image of Detroit as pathways to improve the city's economy. Some of which is being realized today (Carter et al. 2023: 195). In another case study, Cape Town, South Africa, is emphasized as a city that has used resources to its advantage, including the natural landscape that lures in tourists from around the world, and the human capital of the area's universities and labor force (Bliesze et al. 2023: 395). That said, the city faces challenges with infrastructure and the repercussions of apartheid and government corruption, pointing to the importance of policy in setting the environment for sustained economic growth (ibid.).

Audretsch's research program understands the importance of context, time, and place, and brings together multiple disciplines to synthesis how innovation and economic growth occurs in the real world. He sheds light on why we do not see universal economic flourishing. However, by focusing on the outcomes of entrepreneurial activity – knowledge spillover and thriving or struggling locations – it is possible to overlook the primary driver of social change – the entrepreneur – in favor of more broad-sweeping and top-down policies. By making the entre-

preneur a small part of the strategic management of place, rather than the driving force, the mechanisms of economic (and social) change in the system become more abstract.

Further, he constrains his theory of entrepreneurship to the private sector and profit maximization behavior. While he discusses the role of education, networks, and policy in shaping the places where progress occurs, the role of the entrepreneur is limited to exploiting opportunities through primarily profit-seeking means. Yet, many of his examples feature entrepreneurs who want to transform people's lives in ways that go beyond making themselves rich and who act to revitalize their towns and communities even though it may be more profitable to move to the latest geographical hot spot (exactly what Audretsch in chapter 2 describes as "entrepreneurship for a place").

This broader social change, we argue, is also driven by entrepreneurship. We incorporate another strand of literature – that of the contemporary Austrian school of political economy and its focus on process, entrepreneurship, and bottom-up social change – to resituate the entrepreneur in Audretsch's framework in the next sections.

3. The Austrian Entrepreneur as an Agent of Social Change

The Austrian school of political economy places a strong emphasis on entrepreneurship theory and understanding the market as a process (see Kirzner 1979). The market process involves prices as signals that the entrepreneur "reads" to decide what opportunity to exploit or what production method to pursue. Profit and loss incentivize the entrepreneur to act and simultaneously offer feedback on her activity. If an entrepreneur brings her good to market, asking for a price of $20, and comes away with a loss (no sale), she must realize that perhaps she should lower her price. She then revises her "ask" until she finds a buyer. If, however, she sells out quickly, she may benefit from raising her price or increasing production. Prices and profit and loss in a competitive market tend to allocate resources to their highest valued use, and in doing so, lead to greater coordination and economic progress. Kirzner (ibid.: 8) summarizes the role of the entrepreneur as (1) being alert to opportunities, (2) being aware of how to obtain information and how to deploy it, and by doing so, (3) driving markets towards equilibrium.

This process of alert entrepreneurs exploiting opportunities and moving markets toward equilibrium is often presented in contrast to theories of perfect

competition in which "Robbinsian economizers" merely act on given, already known information.[4] As Hayek (1945) explains, the assumptions of perfect competition (i.e., perfect knowledge) do not match reality and eliminate any role for human, purposeful action. He states, "*If* we possess all the relevant information, *if* we can start out from a given system of preferences, and *if* we command complete knowledge of available means, the problem which remains is purely one of logic" (ibid.: 519). But, in the real world, it is not that simple, and humans rarely have all the knowledge needed to fully grasp and commercialize opportunities. While Audretsch calls this the knowledge filter, Austrians call it the knowledge problem. Knowledge is fundamentally dispersed, embedded in context and culture, and inarticulate. Harnessing it requires institutions that help us access and utilize knowledge, and the unique alertness of particular entrepreneurs in a particular time and place.

As Kirzner (1979: 7) describes, "The Misesian theory of human action conceives of the individual as having his eyes and ears open to opportunities that are 'just around the corner.' He is alert, waiting, continuously receptive to something that may turn up." When his plans do not materialize – his goods are left on the shelf – he realizes his error and changes his plans. As Kirzner (ibid.: 7) writes, "At the same time that it transforms allocative decision making into a realistic view of human action, entrepreneurship converts the theory of market equilibrium to a theory of market process."

Lavoie (2015: 51) goes further to connect entrepreneurial discovery and the need for interpretation:

> Interpretation suggests the point that the profit opportunities entrepreneurs discover are not a matter of objective observations of quantities, but a matter of perspectival interpretation, a discerning of

4 Kirzner elaborates on this idea, saying, "Mises's concept of human action embodies an insight about man that is entirely lacking in a world of Robbinsian economizers. This insight recognizes that men are not only calculating agents but are also *alert to opportunities*. Robbinsian theory only applies after a person is confronted with opportunities; for it does not explain how that person learns about opportunities in the first place. The Misesian theory of human action conceives of the individual as having his eyes and ears open to opportunities that are "just around the corner." He is alert, waiting, continuously receptive to something that may turn up. And when the prevailing price does not clear the market, market participants realize they should revise their estimates of prices bid or asked in order to avoid repeated disappointment. This alertness is the entrepreneurial element in human action, a concept lacking in analysis carried out in exclusively Robbinsian terms. At the same time that it transforms allocative decision making into a realistic view of human action, entrepreneurship converts the theory of market equilibrium to a theory of market process" (ibid.: 7).

> the intersubjective meaning of a qualitative situation. Profits are not measured; they are 'read.' Entrepreneurship, I argue, is primarily a cultural process. The seeing of profit opportunities is a matter of cultural interpretation. And, like any other interpretation, this reading of profit opportunities necessarily takes place within a larger context of meaning, against a background of discursive practices, a culture.

Profits (or losses) must be "read" to understand whether goods are demanded (or not) because of the quality or characteristics of the good, or whether it is because of their price or cultural significance, or some other factor. A baker who sells bread must determine whether the loaf of whole wheat sourdough was not purchased because sourdough bread is not desired at all, or if she used inferior ingredients or needs to adjust her recipe, or because the price was too high. At the same time, she must understand whether potential customers are aware of her bread, what their existing habits are for buying bread, and how perceptions of carbohydrates, gluten, or "clean food" similarly impact the market for her goods. She will need to know if her clientele is vegan or gluten-free, or what other social and cultural elements may impact their desire for bread. She will need to know if the elevation in her town is impacting the rise and bake of the dough. And she will need to study and try out various marketing techniques to attract new clientele. Even something as simple as bread requires an understanding of the rich context of your neighbors and surroundings. Storr (2012: 32) posits that, "What meaning should be attached to price changes, when a difference between revenues and expenses in fact signified a large enough profit to make pursuing an opportunity attractive, and what constitutes an appropriate disposition of property, are all (partly) determined by culture." Indeed, "Our assessments of value and our assignments of probabilities come from our stocks of knowledge" and "cultural frame" (ibid.: 32).

Recent scholarship in the Austrian tradition has also argued for a broader understanding of entrepreneurship. Although within the entrepreneurship literature there has been a trend to differentiate among commercial, social, and political entrepreneurship (among others), there are reasons to simply refer to entrepreneurship. Storr et al. (2015: 28) argue that the differences in the kinds of opportunities that social, commercial, and political entrepreneurs notice are often exaggerated. For instance, someone who sees an opportunity to provide food for their community may do so by opening a restaurant or grocery store, or by start-

ing a soup kitchen. They may even offer classes to teach others how to cook or turn a patch of grass or abandoned lot into a community garden.

Storr et al. (ibid.) also argue that entrepreneurs have a varying range of motivations. Many innovators want to transform the world around them in addition to gaining wealth or fame. For example, Rockefeller, Carnegie, and other robber barons established major philanthropic initiatives that support education and the arts, and many businesses, such as Toms and Bombas, use a buy one-give one model for donating their goods around the world. Conversely, philanthropists in the Effective Altruism movement use a more impersonal take on cost-benefit analysis to drive their charity activities.

Similarly, the feedback mechanisms between a social entrepreneur and a commercial entrepreneur, for example, are not so distinct as one might think. Social entrepreneurs also must decipher their impact and success or failure, often having hazier signals than market prices, profits, and losses. Instead, they can look to proxies from within their social networks, like status and reputation (Chamlee-Wright and Myers 2008). These proxies also require interpretation. Just as the baker mentioned above must determine which factors are disrupting her bottom-line, so does the nonprofit manager. If she is not succeeding, it could be that potential beneficiaries do not know about her programs, or that she is providing the wrong services, or that her volunteers are shirking. Similarly, a priest may not be bringing in new congregants because he needs to work on his public speaking skills or because he is pushing a false faith. A social entrepreneur may decide to close up shop or explore and adjust their offerings to better serve the needs and wants of their clientele, just like the commercial entrepreneur.

Rather than parsing the differences among market activity, nonprofit work, political endeavors, and so on, Storr et al. (ibid.) adopt the language of social change to describe the actions of entrepreneurship. They (ibid.: 32) explain, "social change… refers to any endogenous change in the social order." Examples such as social revolutions that radically transform the social structure like the civil rights movement or women's suffrage movement, or the introduction of technology that changes how people interact with one another and share information, are all examples of this sort of broader social evolution and progress. Audretsch's notion of knowledge spillover complements this thinking well. Just as technological innovation may be picked up from another company or research institution, so might we learn from and adapt because of other social movements. Novak (2021) explores this idea, examining the iterative process of contestation and progress

in bottom-up social movements. And Dekker (2016) ties the development and adoption of ideas to the particulars of a place in time by linking Austrian thinkers to the vibrant intellectual circles in Vienna, Austria, where they would gather at cafes and other social spaces to debate and discuss civilization in all its opportunities and challenges.

In the contemporary Austrian tradition, there is a particular importance placed on local context and the social spaces that foster contestation, collaboration, and innovation. In this sense, the spaces normally construed as public or private, or market-orientated, or communal, also have more similarities and fewer differences than we might assume. Cafes and pubs can become venues for lively debate and community organizing in addition to purveyors of food and drink. And churches may not just be places of worship, but where congregants may meet their spouses or gather to discuss issues with their local government. The idea and initial version of Facebook was conceived of in a dorm room on campus whereas Apple got their start, after visiting Xerox, in the garage of Steve Job's parent's home. Indeed, Storr et al. (2015) illustrate how entrepreneurs engaged in social change bring about recovery post-disaster, focusing on Hurricane Katrina and Superstorm Sandy. Both likely and unlikely places (churches and coffee shops but also grocery stores and retail shops) end up playing crucial roles in disaster recovery – allowing residents to gather, swap stories, and formulate their plans.

Social capital and relations fuel this type of learning, connecting us to people who have the expertise we need to pursue a project, or the customers and donors that may be interested in it, and ignite our creativity. Social capital consists of the bonds, tight-knit families as well as loosely tied acquaintances, we have with others and how we can utilize those bonds to realize new opportunities. And our overlapping social groups can spark new ideas, highlight new challenges, and spur new ways of collaboration and competition.

This dynamic process of economic growth, innovation, and collaboration can be viewed as a process of social learning. It consists of how we interact with and learn from one another, pushing on the frontiers of human progress. In markets, this sort of learning is enhanced by prices and profits and losses. The pursuit of profit and technological advancements may also push certain entrepreneurs to take ideas fostered outside of the market and commercialize them. But so does ambitions to solve social problems, provide welfare, and improve education. Storr et al. (2017) explore this process in the post-disaster context, when signals are noisy, and feedback is more opaque. They identify two mechanisms for how social

change occurs through social learning: through (1) adapting existing organizational structures for new needs and (2) creating new procedures and imitating processes from other successful entrepreneurs (ibid.).

4. The Audretschian-Austrian Entrepreneurial Framework for Social Change

By combining the insights that Audretsch and the contemporary Austrian school offer, we get a richer framework of social change, allowing us to:

(1) bring entrepreneurship to the forefront as the agent of social change;

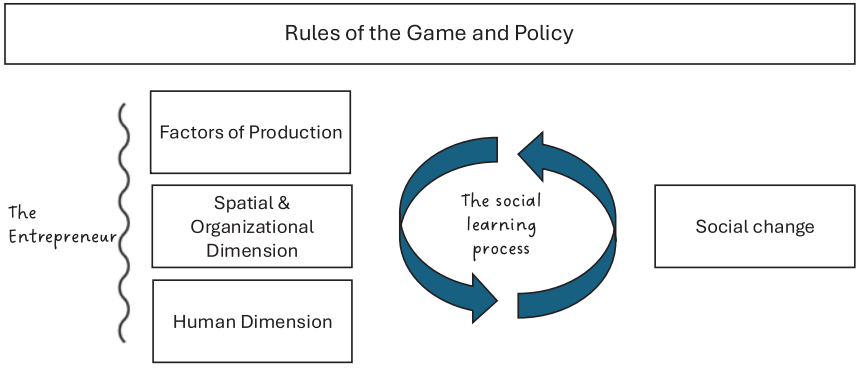
(2) include a knowledge filter, or cultural frame, that impacts how the entrepreneur perceives an opportunity and the resources available to act on it;

(3) pay attention to the factors of production and resources available, how they are organized, and the human dimension;

(4) incorporate a process of social learning, where entrepreneurs receive feedback on their actions and signal to others, leading to enhanced coordination; and

(5) recognize the rules of the game, or institutions and policies that will impact the activity of entrepreneurs.

Figure 2: The Audretschian-Austrian Entrepreneurial Framework for Social Change



Source: Authors' adaptation of figure 1

The new entrepreneurial framework for social change would bring entrepreneurship to the forefront, emphasizing that change is a result of human action (see figure 2). This makes clear the mechanism of change. Next, a twisting line is meant to illustrate what Audretsch refers to as the knowledge filter. While alertness is a quality of human nature, how this alertness is directed and exactly what opportunities are "seen" is determined by a range of factors, including an entrepreneur's background, life experiences, beliefs, etc. This filter then also impacts how they perceive of the categories that Audretsch depicts in his original framework: factors of production, spatial and organizational dimensions, and the human dimension. For example, based on someone's participation in a neighborhood association, they may be aware of certain people in their community with skills that could be leveraged for a local marketing campaign, or they may be aware of a particular strategy that the neighborhood association has used to successfully reach and mobilize residents in the past. This situational knowledge shapes their view of what opportunities may be worth pursuing.

In this new depiction, the process by which progress occurs is identified as social learning, a sort of magnified knowledge spillover, where we learn from one another (both our successes and failures) and are incentivized to mimic and improve upon what worked before in order to find new ways of coordination. The result is not only improved economic performance but broader social change.

Finally, institutions, or the "rules of the game and public policy," impact all aspects of this framework. Whether society is more decentralized and democratic or centralized and authoritative will impact how well entrepreneurs can access knowledge and identify and exploit opportunities. Policies and governance structures will impact who owns and has access to capital, how spatial and organizational structures are arranged, and how we interact with others. For instance, whether property is owned by individuals, or the state will determine how it is used, as will zoning laws and building codes. Social mobility will impact what type of education and jobs people may be able to pursue. Further, policy will impact how robust feedback mechanisms are for signaling progress or a need for adjustment. Chamlee-Wright (2010) calls this "signal noise," which can alter an entrepreneur's ability to take calculated risks. For example, if city officials decide to reassess their zoning laws after a disaster, residents may wait to begin rebuilding, stalling recovery. Or attempt to predict which rules will be enforced, making decisions that may prove wasteful in the future.

5. Case Study of Entrepreneurial Social Change: Rebuilding in the Wake of Hurricane Katrina

Hurricane Katrina hit the Gulf Coast, and particularly New Orleans, Louisiana, on August 29, 2005, as a category 3 hurricane, with winds of 145 mph. The powerful hurricane generated massive waves along the coast and into Lake Borgne and Lake Pontchartrain, two bodies of water surrounding the city of New Orleans. The force of the waves broke through the levee system of New Orleans resulting in massive flooding. Although the initial storm was damaging, the flooding from the damaged levees was the cause of much of the fatalities and property damage. In total, an estimated 1,800 people died, and property damage exceeded $125 billion. At the time of the Hurricane, Katrina was the costliest natural disaster in United States history, a label it now shares with Hurricane Harvey in 2017.

In the immediate aftermath of Hurricane Katrina, there was a search and rescue effort and activities to feed, clothe, and shelter those who were displaced. Photographs taken in the days following the storm show people in boats navigating down streets, sometimes in waters up to 12 feet deep, to help survivors down from rooftops. While many had evacuated before the storm hit or fled to friends and family in Louisiana or neighboring states, those who remained found temporary shelter at the Superdome. As living conditions quickly deteriorated there, due to damage from the storm, overcrowding, and administrative failure, they were relocated to the Houston Astrodome in Houston, Texas. As days turned into weeks and months, response shifted to rebuilding and recovery efforts.

For several weeks after the storm, many residents were prevented from returning to their homes, and then, once they could, were faced with sorting through, discarding, and cleaning up personal items that had marinated in water and mud. Contractors were needed to remove molded drywall and begin the rebuilding process. Homeowners navigated personal insurance claims and FEMA applications. As people evaluated their situation, they also looked to those around them and tried to determine who was coming back and if their community would be forever changed. This is known as the post-disaster collective action problem (Storr et al. 2015). While the costs of rebuilding and recovery are clear, and often substantial, the benefits are uncertain. This is true not only for residents but business owners and government officials. Should they try to reopen their business if they will have no customers? What neighborhoods should receive public services first, if at

all? In such a situation, it is rational for actors to "wait and see" what others do, potentially stalling recovery altogether.

Despite those challenges, New Orleans did come back as do many other communities. Recovery though, was uneven, slow in many neighbors and quick in others. Storr et al. (2015) illustrate how entrepreneurs were essential in overcoming the collection action problem. In particular, the authors find that entrepreneurs performed three key roles: (1) they provided needed goods and services, (2) they helped to rebuild or even create new social networks, and (3) they signaled that recovery was taking and would continue to take place. By providing goods and services such as grocery stores, hardware stores, and construction services, as well as church services and community gathering spaces, entrepreneurs effectively reduced the cost of returning. Entrepreneurs sometimes intentionally and sometimes unintentionally helped to reconstitute social networks, that then helped to spread information and persuaded others that rebuilding was possible. Finally, their activities to return, rebuild, and recover, were perceived by others in their community as a credible commitment to New Orleans.

The Audretschian-Austrian entrepreneurial framework for social change (see figure 2) allows us to consider the relevant tools that a community might leverage to bring about social change – in this case, coordination and recovery in the wake of devastation. In the aftermath of Hurricane Katrina, there's evidence that the policies in place frustrated recovery efforts (see Chamlee-Wright 2010; Storr et al. 2015; Haeffele and Storr 2020). Because of flooding and safety concerns, the city put in place rules that prohibited many from returning to their homes to view damage and try to retrieve personal items. This delay, however, unintentionally led to further damage, damaged roofs let in wind and rain, and mold overtook entire homes and other buildings. Rather than having to tear out and replace damaged drywall, flooring, and ceilings, many residents had to completely gut and rebuild their homes. The delay also made it difficult to communicate with their neighbors, who were displaced across the United States, and as time went on people had to make decisions about finding new jobs and schooling for the children, either back home or in a new city.

While individual residents were waiting to assess the status of their homes and belongings, the City of New Orleans also constructed a plan for how to rebuild. At first, the Bring New Orleans Back (BNOB) Commission released a map of the city, with green dots indicating neighborhoods that would not be rebuilt because of the level of damage and potential for flooding from future

storms. Instead, these spaces were to become urban greenspaces and residents would have to relocate elsewhere, unless they could prove that they were a "viable neighborhood" by showing that 50% of residents had returned or were committed to return. As Chamlee-Wright (2010) argues, placing the burden of proof on owners instead of redevelopment planners created regime uncertainty. Even if they wanted to return, they may not be able to, or their efforts could be wasted if they later were told to relocate. This led to challenges from residents, who now had to gather and prove vitality in addition to figuring out their own individual recovery plans.

As city officials and residents worked to negotiate the rules, the residents of New Orleans were able to analyze their resources on hand and leverage those resources to rebuild and recover. The residents qua entrepreneurs identified and employed factors of production, understood and took advantage of the spatial and organizational aspects of the city, and importantly, made use of the human dimension to overcome the collective action problem. Before Hurricane Katrina, the factors of production in New Orleans were a diverse labor force of skilled and unskilled workers, the natural resources of the Mississippi River and Gulf of Mexico and related maritime industry, as well as a booming tourism industry, and a collection of higher education institutions, including Tulane University, Loyola University, and University of New Orleans. The city of New Orleans was organized into many separate neighborhoods (over 70, many between Lake Pontchartrain to the north and the Mississippi River to the south), although there was also a sense of being a member of the larger city. New Orleans is known for its distinct culture, including cuisine, music, nightlife, and religious and spiritual traditions.

Entrepreneurs and residents utilized social networks and their shared sense of identity to respond to the BNOB Commission redevelopment plan and to solve the collective action problem in their own neighborhoods. For example, LaToya Cantrell served as the President of the Broadmoor Improvement Association, a diverse neighborhood in central New Orleans that was labeled with a "green dot" by the BNOB Commission. Storr et al. (2015: 90-93) argue that Cantrell acted as an entrepreneur, identifying an opportunity to shape the future of her neighborhood and putting a plan into action. Using records from the BIA, she and others contacted residents and urged them to come back. The BIA distributed yard signs that said "Broadmoor LIVES" and held meetings to organize, clear signals that that resident was intending to fight the dot and rebuild. By drawing on the diverse talent within the community, BIA was able to develop marketing and community

organizing strategies to prove their vitality. In addition, Broadmoor benefited from connections outside of the community – particularly the Belfer Center at Harvard University. Students and scholars from Harvard came to Broadmoor, surveyed the neighborhood, and produced maps that showed the progress of return. These efforts led to Broadmoor recovering more quickly than many other neighborhoods with similar levels of damage.

The Lower Ninth Ward was slower to rebound, having already been negatively depicted in the media as a place of high crime and low incomes before the storm and sustaining some of the most severe damage following Hurricane Katrina. Despite that, many residents felt a strong sense of connection and community. Alice Craft-Kerney, a registered nurse who grew up in the neighborhood, characterized the neighborhood as a "family-oriented place" … "[growing up] we didn't lock our doors. And, everybody knew each other" (ibid.: 76).

This sense of place continued in the aftermath of Hurricane Katrina, as residents and volunteers worked to restore the community. Craft-Kerney mentioned that Common Ground and community churches provided much needed assistance and inspiration during that difficult time. Inspired by the acts of service she witnessed and received from others, she decided to use her skills as a registered nurse and open a health clinic in the Lower Ninth Ward.

As both a resident of the Lower Ninth Ward and a medical professional, Craft-Kerney recognized the opportunity to provide health services in an impoverished location that was often overlooked by the media and official programs. She believed that there would be demand for affordable and cash-based services (priced at $25 a visit) provided by health professionals who care and understand their specific needs. Opening the clinic was more challenging than she anticipated though – including zoning issues with turning a residential building into a clinic and getting it up to code. In February of 2007 Craft-Kerney was finally able to open the doors to her clinic. She quickly had a steady stream of customers, illustrating a need for the services.

Craft-Kerney is an entrepreneur – she spotted an opportunity and brought it to fruition. Her clinic was able to operate at an affordable price and generate revenue to support herself. Although she offered services for a fee and received a salary, her motivation was certainly both to earn a living and improve her neighborhood. Her own learning process reflected entrepreneurial discovery, the testing of an idea, and receiving feedback (i.e., patients to her clinic). Further, Craft-Kerney's clinic played a part in the recovery of the Lower Ninth Ward by increasing

the benefits of return (i.e., residents knew they had access to health care) and signaling that residents were credibly committed to come back. While she experienced delays, so did many of her neighbors, showing how policies and particular contexts can impact people's plans and interpretations of the future.

6. Conclusion

Audretsch's research has been instrumental in understanding the complexity around entrepreneurship, innovation, and the success and failure of particular cities and regions. His multi-faceted approach brings together literature from economics, entrepreneurship, urban planning, and policy while also highlighting the importance of culture and context. The context-rich research program is unique. When much of academia has become more specialized and data-driven, it is encouraging to see a prominent scholar embrace the complexity and nuances of life through robust empirics, case studies, and other methods. And while policy implications matter for Audretsch, he does not lean in to sweeping, one-size-fits-all recommendations that often overlook the needs and capacities of the smaller communities and economic clusters that drive progress.

In adding onto his approach, we show how another strand of literature is complementary to his theory and bring to the forefront the role of the entrepreneur in driving social change. The contemporary Austrian tradition, by focusing on methodological individualism, radical subjectivity, and the process of exchange, helps ground the entrepreneur's role in the process, and recognize her ability to cross sectors, be motivated by various goals, and spur progress.

As such, we can analyze the various aspects of the entrepreneurial process of social change and pinpoint policies that may hinder or foster its functioning. More specifically, policies should refrain from distorting the knowledge filter or putting an emphasis on one dimension over the others (say overly regulating organization structure or overemphasizing physical capital). Furthermore, the human dimension is crucial and any policies that attempt to sanitize relations and interactions will impact our ability to engage in social learning and advance social change. This approach simultaneously provides robust detail and explanatory power to why some communities thrive and others do not while also cautioning for a humility in policymaking that seeks to amplify entrepreneurship without dulling the diversity of place and opportunity.

References

Audretsch, David B. 2007. *The Entrepreneurial Society*, Oxford: Oxford University Press.

Audretsch, David B. 2015. *Everything in Its Place: Entrepreneurship and the Strategic Management of Cities, Regions, and States*, New York: Oxford University Press.

Audretsch, David B., Max C. Keilbach, and Erik E. Lehmann. 2006. *Entrepreneurship and Economic Growth*. New York: Oxford University Press.

Audretsch, David B., and Erik E. Lehmann. 2016. *The Seven Secrets of Germany: Economic Resilience in an Era of Global Turbulence*, Oxford: Oxford University Press.

Audretsch, David B., Erik E. Lehmann, Jonah M. Otto, Laurenz Weiße, Katharine Wirsching, (eds.). 2023. *The Strategic Management of Place at Work: Why, What, How and Where.* New York: Springer.

Audretsch, David B. and Marco Vivarelli. 1996. "Firms size and R&D spillovers: Evidence from Italy." *Small Business Economics* 8: 249–258.

Bliesze, Luisa, Bianca Foronda, Pia Obenauf, Tyler Rogian, and Laurenz Weibe. 2023. "Cape Town: Making Progress Possible Together?" In David Audretsch, Alice Civera, Erik E. Lehmann, Konstantin Leidinger, Jonah Otto, Laurenz Weibe, and Katharine Wirsching (eds.), *The Strategic Management of Place at Work*. Cham, Switzerland: Springer, pp. 395-411.

Carter, Morgan, Niamh Dillon, Felix Gutsche, Konstantin Leidinger, Jan-Niklas Otte, and Sara Signorelli. 2023. "Population Decline: Detroit's Exodus" In David Audretsch, Alice Civera, Erik E. Lehmann, Konstantin Leidinger, Jonah Otto, Laurenz Weibe, and Katharine Wirsching (eds.), *The Strategic Management of Place at Work*. Cham, Switzerland: Springer, pp. 195-210.

Chamlee-Wright, Emily. 2010. *The Cultural and Political Economy of Recovery: Social Learning in a Post-Disaster Environment*, New York: Routledge.

Chamlee-Wright, Emily and Justus A. Myers. 2008. "Discovery and social learning in non-priced environments: An Austrian view of social network theory." *The Review of Austrian Economics* 21: 151–166.

Dekker, Erwin. 2016. *The Viennese Students of Civilization: The Meaning and Context of Austrian Economics Reconsidered*. Cambridge: Cambridge University Press.

Haeffele, Stefanie, and Virgil Henry Storr. 2020. *Government Responses to Crisis*. Cham, Switzerland: Palgrave Mcmillan.

Hayek, F. A. 1945. "The Use of Knowledge in Society." *The American Economic Review* 35(4): 519–530.

Kirzner, Israel M. 1979. *Perception, Opportunity and Profit: Studies in the Theory of Entrepreneurship.* Chicago: University of Chicago Press.

Lavoie, Don C. 2015. "The Discovery and Interpretation of Profit Opportunities: Culture and the Kirznerian Entrepreneur" In Laura E. Grube and Virgil Henry Storr (eds.), *Culture and Economic Action*. Northampton: Edward Elgar, pp. 48–67.

Novak, Mikayla. 2021. *Freedom in Contention: Social Movements and Liberal Political Economy*. Lanham: Lexington Books.

Smith, Adam ([1776] 1982), *An Inquiry into the Nature and Causes of the Wealth of Nations*. Indianapolis: Liberty Fund.

Storr, Virgil Henry. 2004. *Enterprising Slaves and Master Pirates: Understanding Economic Life in the Bahamas*. New York: Peter Lang.

Storr, Virgil Henry. 2013. *Understanding the Culture of Markets*. New York: Routledge.

Storr, Virgil Henry, and Stefanie Haeffele-Balch. 2012. "Post-Disaster Community Recovery in Heterogeneous, Loosely-Connected Communities." *Review of Social Economy* 70(3): 295–314.

Storr, Virgil Henry, Stefanie Haeffele-Balch, and Laura E. Grub. 2015. *Community Revival in the Wake of Disaster Lessons in Local Entrepreneurship*. New York: Palgrave MacMillan.

Storr, Virgil Henry, Stefanie Haeffele-Balch, and Laura E. Grube. 2017. "Social Capital and Social Learning after Hurricane Sandy." *The Review of Austrian Economics* 30(4): 447–467.

Venkataraman, S. 1997. "The Distinctive Domain of Entrepreneurship Research." In Jermone A. Katz and Andrew C. Corbett (eds.) *Seminal Ideas for the Next Twenty-Five Years of Advances in Entrepreneurship, Firm Emergence, and Growth*. JAI Press, pp. 5-20.

Verheul, Ingrid, Sander Wennekers, David Audretsch, and Roy Thurik. 2002. "An *Eclectic Theory* of Entrepreneurship: Policies, Institutions and Culture," in David Audretsch, Roy Thurik, Ingrid Verheul, and Sander Wennekers (eds.), *Entrepreneurship: Determinants and Policy in a European-US Comparison. Economics of Science, Technology and Innovation*. New York: Springer, pp. 11–81.

Building the Green Paradise: Sustainability in Action in Northern Spain

Amy Tibbitts[1] **and Pablo Toral**[2,3]

1. Introduction

In this chapter, we use the strategic management of place framework to study the (re)development of a place (focusing on sustainability) and illustrate how the framework can also help facilitate student learning. Our case study is based on "Building the Green Paradise: Sustainability in Action in Northern Spain," (from now on, "Building the Green Paradise") a Global Experience course taught in May 2025 by professors Amy Tibbitts (Department of Modern Languages, Spanish, Beloit College) and Pablo Toral (Environmental Studies and International Relations, Beloit College). The Global Experience seminars at Beloit College are short-term faculty-led seminars built around a global question to equip the students with new insights and methodological tools to explore key global issues via field research.

Influenced by the 2024-25 Upton Scholar David B. Audretsch's theory of the role of place in economic development, the instructors and students studied sustainability, first in Beloit, Wisconsin and then in Asturias, Spain. The guiding research question for "Building the Green Paradise" was, "what allows a region to develop a successful economic development strategy around principles of

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3 The authors wish to thank Kathy Landon and Josh Moore for their help and support to create the course and to facilitate student learning while teaching it. We also wish to thank the feedback received from Elizabeth Brewer and Laura Grube on earlier drafts of this chapter.

sustainability?" Audretsch's (2015) research suggests that place matters. Much of the scholarship on economic development takes a country, an industry, or a firm as a unit of analysis, neglecting the region. However, Audretsch points out that some regions and cities thrive economically, while others do not, not just across countries, but within countries. What accounts for this? Audretsch argues that communities at the subnational level can do much to craft their own economic performance, by positioning themselves to harness national and global trends.

This is a challenging hypothesis to test, in part because many actors bear responsibility for regional economic policy, including city and regional officials, civil servants, business leaders, community activists, citizens, and the population as a whole. Audretsch's research indicates that, rather than clusters, defined by Michael Porter (2000) as a network of geographically concentrated and interrelated highly productive complementary firms, or what Richard Florida (2002) calls a "creative class," a group of professionals in critical industries such as technology, engineering, and the arts, a powerful driver of economic success is a sense of "place" shared by the people living there, and the ability of community leaders (government, business, and civil society) to work together to craft a critical strategy for economic success. This is what Audretsch (2015) calls "strategic management of [their] place."

Asturias is a particularly interesting case study because it is a region of Spain that has distinguished itself by its ability to bounce back from a process of de-industrialization in the 1970s and 1980s to become a sustainability hub capable of incubating world-leading firms. To learn how key actors in Asturias build, cultivate, and "manage their place," we set up a series of site visits to interview leading government officials, civil servants, entrepreneurs from several industries, workers, educators, students, and NGO representatives. To facilitate student engagement with our on-site informants, we equipped the students with ethnographic field-research techniques for data-mining (mainly in-depth interviews and visual sociology, a series of multi-method research techniques to mine the physical environment for data relevant to a research topic) and data-analysis (coding methods and theoretical hypothesis testing) and gave students the freedom to choose the format they would use to deliver the key findings from their research. Audretsch's theory served as the basis to help the students analyze and interpret the data they collected in the field. The course had a short and intensive timeframe, only three weeks, one spent on our college campus and two on the field.

Our students thus became a "small army" of field researchers collecting

evidence to test hypotheses. At times they worked in teams, at others individually, but always peer-reviewed each other's work. The conclusions from their research were significant and strongly supported Audretsch's hypothesis about the importance of building a sense of place, and the ability of the community to develop a long-term strategy to manage their place. The course methodology worked: final projects indicated that the students were now quite familiar with ethnographic research methods.

In this chapter we describe how we used Audretsch's framework combined with the theme of sustainability and uncovered the ways in which Asturias, Spain has navigated a changing economy. In the next section, we provide further background on Asturias. We analyze Asturias using the factors outlined in Audretsch's strategic management of place. In section 3, we describe our course in greater detail, including a discussion on experiential and interdisciplinary approaches, the learning goals for the course, the content – the businesses and organizations that we visited -, and how students developed and carried out individual research projects. Then in sections 4 and 5, we present lessons learned and concluding remarks.

2. The Strategic Management of Place: A Case Study of Asturias, Spain

Our course "Building the Green Paradise" used the province of Asturias in northern Spain as a laboratory to study the development and confluence of sustainable practices linked to environmental clean-up, economic revival, cultural heritage, and tourism. As a region recognized for its natural beauty and heavy industrial past, Asturias has emerged as unique for its innovative thinking, reinvention, and self-promotion, all anchored around implementing more sustainable practices and a healthy economy. The United Nations has identified climate change as a critical global issue. Connected to climate change are an array of other critical global issues related to health, children, poverty, human rights, food, and water. "Building the Green Paradise" centered on sustainability as directly connected to solutions for climate change, along with its impact on other critical global issues.

Why Asturias, Spain? Since the dawn of the industrial revolution in Spain in the early nineteenth century, Asturias's economy has been based on energy production and manufacturing. The availability of abundant coal deposits attracted the interest of European entrepreneurs in the early nineteenth century, especially

British, Belgian, and French investors who modernized the coal industry in Asturias by developing large vertical mining operations since the early 1800s similar to those in their home countries and diversified their investments downstream into metallurgy. By 1900, Asturias was one of the wealthiest regions of Spain. Its manufacturing sector included production of construction materials and basic consumer goods (e.g. glass, ceramics, etc.,) coal-fired power plants, chemicals, fertilizers, rail, weapons, and ship building, among others. Entrepreneurs from other industrial regions of Spain, particularly the Basque country and Catalonia, were also attracted as they saw an opportunity to diversify their own investments into new regions and products.

Asturias' two major coal mining and industrial cities, Langreo and Mieres, doubled their population between 1900 and 1920, and then again between 1920 and 1960. The Spanish Civil War (1936-1939) served as an inflection point. Spain did not take part in W.W.II and was subject to international trade sanctions between the end of W.W.II and the 1960s. The need to rebuild the infrastructure destroyed during the Spanish Civil War was a boon to Asturias' manufacturing, which received significant support from the Spanish government via infrastructure development and direct investments via state-owned enterprises. The port cities of Avilés and Gijón received most of these investments, in part to take advantage of the cheaper costs of sea transport. As a result, the coal mining regions began to lose population while these two coastal industrial towns boomed, attracting migrants from other parts of Spain and abroad. The population of Avilés grew fourfold between 1950 and 1970, and Gijón's doubled between 1960 and 1980. The population in Asturias peaked at around 1.13 million people in 1982, and began to fall since, bottoming out at just over 1 million in 2022 (INE.) The trend has since reversed and Asturias has been gaining population again. What changed?

Audretsch (2015: 14) explains that business cycles and economic downturns and recessions are natural and that no place is immune to them. The return of democracy to Spain in the 1970s, Spain's entry into the European integration system in the mid-1980s, and Spain's gradual elimination of trade restrictions since joining the European Common Market in 1986 subjected Asturias' industries to severe international competition. Unable to withstand global competition, many factories closed down and a wave of "deindustrialization" set in in the 1980s and 1990s. As a result, Asturias' GDP per capita began to fall, unemployment grew above the national average, and population declined (the result of outmigration, aging population, and some of the lowest birth rates in the European Union).

What makes Asturias an interesting test case for Audretsch's approach is the region's ability to turn its economic fortunes around. Audretsch argues through his strategic management of place framework that places need to take four elements into consideration: resources or factors of production; spatial structure and organization; the human dimension; and public policy (ibid.: 15). During our field research, our students found empirical evidence of the positive impact of each of the four elements in Asturias' turnaround.

Audretsch (ibid.: 23:) defines resources or factors of production as natural resources, physical capital, infrastructure, human capital, skilled labor, creative workers, finance, and knowledge capital. While the coal mines have closed and mining is now a marginal industry by employment, Asturias retains very strong manufacturing facilities (e.g. metals and chemicals); a growing network of industrial parks, high-tech parks, and business incubators; good-quality physical infrastructure; one of the country's strongest welfare state systems, including good health care and education systems (Asturias' students regularly score at the top of Spain in standardized tests); and a very qualified labor force.

As Audretsch (ibid.: 24) explains, the resources and factors of production matter, as do how they are structured and organized. Asturias has a long tradition of collaborative collective decision-making involving government and key groups representing civil society, especially business associations and labor unions. Gijón´s Vice-Mayor, Ángela Pumariega (representative of the center-right People´s Party, PP), explained to the students during our visit that this tradition of collaboration is partly the result of the political system based on proportional representation, which regularly denies a single political party the ability to control the majority of seats in the Asturias legislature or in the city councils of the main cities, thereby making coalition-building a necessity. Political parties must negotiate legislative initiatives and the allocation of tax revenue and other resources to implement those initiatives. The parties even negotiate who will be the Asturian president, the mayors of the larger cities, the composition of the president's cabinet and the city councils after elections, on the basis of the share of the vote received by each party. The result is a cooperative approach to planning that emphasizes long-term goals and initiatives, over short-term partisan ones. Sustainable development is one of those key long-term priorities (Pumariega 2025).

Pumariega illustrates this collaborative approach with her own experience as a member of the City of Gijón's council by explaining that IMPULSA, the City's agency for the promotion of economic development, sets its priorities through a

process of consultation that brings together elected officials of the City of Gijón, civil servants employed by IMPULSA, representatives of Federación Asturiana de Empresarios - FADE - (the Asturian Business Association), and two of the largest labor unions, Communist-leaning Comisiones Obreras (CCOO) and the Socialist-leaning Unión General de Trabajadores (UGT) (ibid.). Adela Garrido Rodríguez, Project Manager for IMPULSA, pointed to Gijón´s Science and Technology Park (Parque Científico Tecnológico) as one of the best examples of the success of this strategy, as it houses 220 firms that employ 6,000 people (1,200 involved in R&D), sustains an additional 10,000 jobs in related firms located outside the park, and generates 36% of Gijón´s GDP (Gijón´s population is just under 300,000) (Garrido Rodríguez 2025).

Of course, the human dimension, which Audretsch (ibid.: 84-103) articulates as networks and linkages, social capital, identity and image, and leadership, is also vitally important. The importance of social networks was likely the element of Audretsch's framework that most clearly caught the interest of our students. As we illustrate later in the chapter with examples of student work, all informants across all sectors of society (firms, government, and non-profits) shared testimonials in which they emphasized the importance of sustainability and innovation. Students learned that a good reason behind the success of Gijón's Science and Technology Park rests on its ability to bring together representatives of the university (the tech park is within walking distance of the University of Oviedo's Gijón campus and one of the university hospitals), government, unions, and innovators to start new companies. The students also found a narrative that described Asturias as a "natural paradise" of beautiful nature and the need to achieve a model of sustainable development that overcame the challenges of the past to protect that natural beauty. Most strikingly for our students was the fact that representatives of key groups from government and civil society work together regularly and effectively along agreed upon priorities and policies, with the government playing the role of coordinator and facilitator, and sometimes leader.

The fourth piece of Audretsch's framework is public policy (ibid.: 27). The Asturian regional government has worked closely since the economic crisis of the 1980s with the municipal governments of the central area of Asturias and with civil society (labor unions, the university, and business associations) to implement a new model of economic development that builds on Asturias' strengths, such as its long tradition of investment in energy, manufacturing, and innovation, in a new age of globalization and environmental challenges. It has prioritized innova-

tion in software, mechanical engineering, the "blue economy," industrial design and manufacturing (of energy facilities in renewables and nuclear mainly, chemicals,) ecotourism, organic agriculture, and other sectors.

While Asturias is a small province of one million that lacks the economic and the political muscle of other regions in Spain (population fifty million), its elected officials and civil servants have been able to help Asturian society articulate a vision of sustainable economic development around the idea of Asturias as a "paraíso natural." The government has submitted successful applications to the European Union for funds for the green economy, education, labor training, and infrastructure development that have helped fund some of this transformation. HUNOSA, the state-owned enterprise that operated the last remaining coal mines and remains responsible for remediation (the water must be constantly pumped out of the mines or the towns built around them will flood,) has launched several initiatives in collaboration with researchers from the University of Oviedo and/or with local businesses. They now use the mines' water for geothermal energy (heating and cooling of buildings) in the mining regions of Asturias. The European Union has recognized these initiatives (as well as others) and has hailed them as models for other countries. As a result, Asturian civil servants (those involved in the geothermal initiatives or in Gijón's Science and Technology Park, among others) visit other countries as consultants to offer advice on how to replicate similar initiatives.

As an historically polluted and heavily industrialized region of Spain, Asturias stands as an example of a province that has used creative-forward thinking to find present-day solutions to environmental crises *in situ*. Likewise, the region's approaches to confronting environmental challenges and capitalizing on its gifts can be studied as a model for other regions looking for solutions to site-specific concerns. For instance, the region promotes itself as a place of "natural" tourism and adopted the official slogan "Paraíso natural" (Natural Paradise) as a way to promote the area to tourists seeking pristine natural beauty, clean waterways and coastal lines, unpolluted by a backdrop of heavy industry. In fact, the adoption of this phrase by the regional government in the early 1980s, during the worst phase of de-industrialization and economic decline, helped catalyze regional leadership across society around the need to build a new model of economic development that left behind uncompetitive coal-powered industrial works and focused on a new cleaner and sustainable future.

Indeed, by investing in sustainable practices, Asturias' motto functions as both

a guiding principle for commerce and regional promotion, and as a way to inspire future ways of thinking. High-tech activities generate a growing share of the region's GDP and attract a larger share of employment. 21% of GDP comes from manufacturing (11% comes from metals alone). IT and defense, which generate 5% and 9% of GDP respectively, have stimulated Asturias' exports to record levels. In 2024 alone, the number of people employed in IT sectors grew by 30%. Some of the most innovative areas of R&D involve the use of the mines not just to expand geothermal capacity, but also as data centers, underground agriculture, and development of new space and satellite technology (Poncela 2025; Sekuens 2025.)

What is striking about Asturias as a case study, both in terms of academic scholarship as well as in practical terms, is that on the whole, nationally speaking, Asturias is a small region with relatively little clout or political power, yet has been able to institute sweeping changes for the betterment of its inhabitants. As a result, it offers a unique opportunity to study its practices, industries, and policies and serves as a counterpoint to the academic research that has focused on larger more successful regions.

Smaller regions are hardly researched and yet, they hold significant lessons for others, in part because the successful cases such as Asturias were accomplished thanks to the ingenuity and creativity of the stakeholders who crafted Asturias' strategic management plans. It is precisely this region's emphasis on human capital, rather than financial or material resources, that hopefully will inspire other smaller communities to adopt and promote sustainability as a way of life. Many of the initiatives have been recognized by the European Union as a role model and promoted to other E.U. regions to inspire their own sustainability plans. By studying this resilient region, students learned how, by being daring and taking some risks, cultural and economic innovation can drive and impact deep social change and revitalize communities that might have died otherwise.

3. Course Design and Student Learning in "Building the Green Paradise: Sustainability in Action in Northern Spain"

The course was designed for first- and second-year students with a preliminary interest in sustainability. Given its interdisciplinary design, it attracted students exploring disciplines as varied as environmental studies, political science, business, anthropology, sociology, health and society, environmental studies, and Spanish. Upper-level students who enrolled in the course were looking to sharpen

on-the-ground research skills needed for their upcoming senior capstone projects. In total, there were 17 students who participated in the course.

Both Amy Tibbitts (Department of Modern Languages, Spanish) and Pablo Toral (Environmental Studies and International Relations) frequently teach courses related to the environment, such as Environmental Literature from the Spanish-Speaking World (Tibbitts) and International Political Economy (IPE) of the Environment, Environmental Law and Policy, and Sustainable Cities (Toral). Both instructors have personal and professional ties to the region, so there is potential to develop longer-term relationships between Beloit College and the host institutions in Asturias. In addition to Tibbitts and Toral, Kathy Landon, Assistant Director of the Global Experience Office and Study Abroad Advisor, joined the group. Three faculty and staff then made it easier to offer Spanish to English translation when necessary, support for reflection and debrief, and other logistical support. The streets of Asturias are also very safe, and the region's commitment to sustainability means that public transportation is outstanding, which makes it easy to travel from place to place.

The assignments, structure, and learning goals of the course were informed by education research that highlights the learning advantages of case-based, faculty-led experiential learning. Constructivist education theories suggest that on-site learning is the result of a process of engagement and socialization with both peer learners and the host community (Bada and Olusegun 2015). Experiential-learning theories indicate that students are more likely to achieve a deeper understanding of their subject of study when exposed to real-life situations. They will also be more likely to reflect on their own experience and draw conclusions that they will apply in new situations (Kong 2021; Savicki and Price 2019). With these ideas in mind, we decided that the course curriculum had to intentionally focus on the types of learning relationships that would bring the students together with their teachers as well as with the informants in the community. If these relationships facilitate collaboration, free thinking, and original research, they can lead to significant student growth, both as a researcher as well as a person. In addition, the relationship between the community and Beloit College will be strengthened, thus paving the way for possible further collaborations (Bovill 2020).

By bringing two professors together as team teachers, we sought to facilitate interdisciplinary inquiry and learning. Although interdisciplinary projects create their own challenges, research suggests that they also facilitate learning around the "4C skills: cooperation, creativity, communication, and critical thinking" (Ye and

Xu 2023). Case studies have also been proven to be effective methods for learning (along with simulations) and have been widely used in disciplines including business and education (Farashani and Tajeddin 2018). Finally, and very importantly, the international component of our course built on research suggesting that short-term faculty-led study abroad courses can have a positive impact on students' global competencies (Fisher, Iverson Hitchcock, Moak, Neyer, Moore, and Marsalis 2023), which is one of the key intended goals of Beloit College's Global Engagement courses.[4]

Below we highlight some of the key learning goals we set out for the course.

1. The course added an international perspective to a global issue, sustainability, by using a mid-size region of Spain as its case study. By studying sustainability practices in another area of the world, students learned how global issues require solutions at the local level that reflect the interplay of natural and social forces in each locale.
2 Students were able to see how different actors in Asturian society worked together to craft and implement a comprehensive sustainability strategy. Students engaged directly with actors from civil society and government, and were able to receive first-hand accounts of the role each actor plays.
3 The on-site experience taught the students how to be creative and innovative in response to some of the world's environmental challenges to help them see themselves as future innovators and creative thinkers for their own communities.
4 Students navigated a new landscape, experienced a new culture and language, met new people, and challenged their assumptions about themselves and their own cultural heritage.
5 Students learned field research techniques.

The course ran during three weeks in the month of May, after the end of the 2025 spring semester. As indicated in the introduction to this chapter, the first week of the course took place on the Beloit College campus to familiarize students

4 An important goal of Beloit College's "Global Experience" courses is the development and sharpening of intercultural skills. Two of our colleagues in the Global Experience Office facilitated this type of learning by working directly with students in the weeks leading up to the course, as well as during the on-site portion of the course. It is beyond the scope of this chapter to delve into intercultural skill development. For more information, see Deardorff (2006).

with each other and the instructors, equip the students with skills for international off-campus study and field research methods, and introduce background on both sustainability and Spain. The remaining two weeks were conducted entirely onsite in Asturias, where the students collected data during field trips. The faculty participated in interviews with hosts, but allowed the students to take the lead with their questions. At the end of each day of research, we took thirty minutes to an hour to debrief and encouraged the students to begin coding so as to help them develop their own individual research project.

The site visits were chosen by the faculty during an exploratory visit to Asturias in October 2024. The visit was also used to explain the goals of our course to our selected informants and to confirm their willingness to host us. In the following weeks, we confirmed the final itinerary via email. To test Audretsch's hypothesis, we selected a variety of actors from government, civil service, private sector, and non-profits, in both urban and rural areas of Asturias. All of the visits were chosen because they represented a leading actor in their industry, for example renewable energy, research labs, start-up parks, eco-schools, retail, organic food, historic preservation, conservation of endangered ecosystems, green ecotourism, cultural tourism, and cuisine innovation. Two industries have been critical to Asturias's industry since the industrial revolution: energy (coal-based originally) and manufacturing (metals). Many of the leading firms we visited still operate in these industries, which remain major contributors to the region's GDP. See table on page 164 and 165 for list of site visits.

Table 1. List of site visits.

Name	Sector	Location	Notes
EDP	Energy	Somiedo	A utility company
Hunosa (Pozo Barredo and Pozo Sotón)	Mining and remediation	Mieres, San Martín	State-owned firm in charge of post-mining remediation
Os Teixois	Culture and tourism	Taramundi	An open-air ethnographic museum in an abandoned mountain village
Ciudad de Vacaciones de Perlora	Tourism	Perlora, Carreño	Historic vacation site, currently unused
Covadonga	Culture and Natural Environment	Parque Nacional de Covadonga (Picos de Europa)	Spain's oldest national park
Club Náutico Albatros	Culture, Outdoor Recreation, and Natural Environment	Villaviciosa	Private cultural association at the mouth of an estuary currently undergoing an ambitious rewilding process
Parque Natural Eo-Oscos, Parque Natural de Somiedo, Parque Natural de Redes	Culture and Natural Environment	Cordillera Cantábrica	UNESCO world heritage sites (Atlantic Rainforest)
Los Caserinos	Food	Villaviciosa	Organic Creamery
Alimerka	Supermarket chain	Lugo de Llanera and Villaviciosa	Leading European supermarket in terms of renewable energy
University of Oviedo's[1] Climate Change program	University, Research	Gijón campus and Mieres campus	We spoke to the scientists and staff that conduct research on geothermal energy
Gijón's Parque Científico y Tecnológico	High-tech park	Gijón	Business incubator/park
Red Táctica	High-tech park	Gijón	Engineering, renewables

Name	Sector	Location	Notes
Gijón Impulsa	High-tech park	Gijón	City-owned agency for innovation and economic growth
Estelia Astronomía Lab	Research	Ladines	Software, satellite, astronomy research
Laboratorio Biomimético	Research	Ladines	Biomimicry research: materials, design, architecture
Restaurante El Texu	Food research, culture	Ladines	Cuisine innovation
Universidad Laboral in Gijón	Research, historical preservation site	Gijón	Universidad de Oviedo, Gijón campus
Gijón City Government	Ángela Pumariega, Vice-Mayor	Gijón	Gijón city government
Asturias Regional Government	Ovidio Zapico, Secretary of Land Use, Urban Planning, Housing, and Citizens' Rights	Soto de Agues	Legislator and minister
Candás	Tourism	Candás	Fishing and tourist center (formerly whaling town)
Llanes	Tourism	Llanes	Medieval port town, now flourishing tourist destination
Oviedo	Government, research	Oviedo	Capital city of Asturias, site of government, major university town
Gijón	Industry, commerce	Gijón	Asturias´ largest manufacturing and business city
Langreo	Former mining town	Langreo	Geothermal, software
Mieres	Former mining town	Mieres	Geothermal, biomass
Soto de Agues	Tourism, conservation	Sobrescobio	Tourist mountain village

Each informant chose the format they thought most appropriate to share information with the group. Some of our informants delivered a standard professional presentation, illustrated by a PowerPoint slideshow, followed by Q&A with the students. Others gave us tours of their facilities. Very few chose an open-ended interview format from the beginning, probably due to concerns about language barriers and time. We originally expected that some of our site visits would fail due to weather conditions or last-minute agenda changes by our hosts and informants, so we told students that these site visits were subject to change in the interest of student learning, as new sustainability initiatives might be introduced during the time of our visit. However, all of our expected visits took place. The result was a very packed agenda, which caused us to have to cut back on the number and duration of our debriefing meetings due to student fatigue at the end of long days of field research that lasted eight to twelve hours.

The faculty facilitated regular reflections on the research conducted by the students and the staff member held sessions to help the students reflect on their immersive experience and the development of intercultural competencies. For example, the course was assessed through frequent in-person check-ins with the students, including an almost-daily debriefing meeting to discuss our exchanges with the hosts at the end of each day. Field research assignments were designed to maximize creative processing and problem solving around the topic of the day (i.e. history, culture, food, technology, innovation, education, tourism, renewable energy, etc.). A final project sought to offer each student the opportunity to engage in overall assessment of their experience as both researcher and international learner. This project could take the form of a presentation for the class, a paper, and/or a public presentation. We encouraged the students to design their final project with the goal of presenting it back at Beloit College during a student conference called Beloit and Beyond.

Table 2: Breakdown of student evaluation

Category	**Weight**
Pre-departure in-class exam	5%
Participation in field trips/research	20%
Citizenship	20%
Analysis of daily research trips (visual sociology assignment)	45%
Final project and presentation	10%

During our debriefing meetings, as well as in their final papers, the students quickly identified key data to illustrate sustainability and to assess the effectiveness of our hosts' initiatives. For example, they were impressed that the Alimerka supermarket chain shifted entirely to green energy in 2020 and that their sustainability policy already uses a circular approach that focuses on zero-waste. "Waste" is recycled (plastic wrap, carton board, cow manure, to illustrate with a few examples). Additionally, while mines are used to harness geothermal energy in other parts of the world, the ones we visited are the only ones that use renewable energy to move the water from the mine through city buildings, making these projects the greenest of their kind in the world. In turn, Red Táctica develops renewable energy projects à la carte for its clients at different scales, to meet their needs. Gijón's high-tech park employs only 6,000 people, supports an additional 10,000 jobs, and yet accounts for a whopping third of the city's GDP (population 300,000) making it a significant engine of economic growth.

The information in the previous paragraph is a small selection of the data that the students collected first-hand from our informants. It only serves to illustrate the leading role of some of the actors that we visited. However, it is important to note that all of the students could easily point to specific data to illustrate and assess the innovative and leading role of each actor in their activity of interest. Most interestingly, all of the students could also point out some commonalities that run across all of the interviews and visits that we conducted.

Thus students were able to interpret their data in light of a clear definition of sustainability. The course exposed them to several, and the students chose the one(s) that best applied to their academic, personal, and professional goals. The students found the United Nations Bruntland Commission's definition to be particularly useful: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (UN 1987). Since we visited several sites included in UNESCO's World Heritage list, all of the students actively used this definition and some even found it critical to their projects. To be listed, UNESCO requires sites to be of "outstanding universal value" along at least one of ten criteria, including creative, artistic, technological, cultural, and ecological, among others. Our students found the fifth criterion particularly useful for their interpretation of the data: "to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change" (UNESCO 1992-2025).

UNESCO's definition informed a commonly used definition of sustainable development that students learned about in "Building the Green Paradise" that was regularly brought up by some of our informants in their testimonials, thereby constituting a relevant narrative: "people and place" or, in Spanish, "paisaje y paisanaje." In the Spanish literary tradition of sustainable development, this term is widely used, and attributed to one of Spain's great philosophers of the early twentieth century, Miguel de Unamuno, who used the term in his reflections on the meaning of Spain in the 1930s, a time of significant political struggles (decolonization, crises of democracy, the challenge to reconcile different ethnic identities in a single political project, etc.). Unamuno believed that a people's sense of group identity and life in community is rooted in its ties to the land, which in turn shapes its culture and its identity: "la historia se ilumina y aclara con la biología, con la naturaleza, así también la geografía se ilumnia y aclara con la geología." In this quote, Unamuno argues, in a true interdisciplinary fashion, that geology informs biology, which in turn sheds light on history. He goes on to say that the landscape is thus given meaning by the people who make a living out of it: "a este paisaje le llena y da sentido y sentimientos humanos un paisanaje" (Unamuno 1933). Unamuno's definition has continued to shape different conceptions of development, and sustainable development in particular, including in Asturias, which used this concept to request the listing of several of its sites on UNESCO'S World Heritage List. UNESCO has recognized this principle since 1992 to protect significant interactions between people and the environment as "cultural landscapes" (UNESCO 1992-2025).

The prevalence of this phrase in several testimonials allowed students to see it as a narrative widely accepted as the basis for a sense of place in Asturias, a place that they appreciated for its distinct culture and natural beauty. Our informants' willingness to live and work there and call Asturias home helped them develop innovative collaborations across all sectors of society, facilitated by the regional government. One of the students used UNESCO's definition to assess Alimerka's approach to sustainability and went on to compare Alimerka's sustainability strategy to a large U.S. supermarket chain. A student focused on how UNESCO's listing of several sites as "biosphere reserves" attracted world-class researchers who decided to open research centers in Asturias.

Several students with an interest in history and the arts researched the protection of historic buildings, architecture, as well as cultural practices, listed by UNESCO as "intangible cultural heritage," defined by UNESCO as "the

practices, knowledge, and expressions that communities recognize as part of their cultural identity, along with associated objects and spaces. Transmitted through generations, this heritage adapts over time, reinforcing identity and respect for cultural diversity" (UNESCO 2003). Students were surprised to learn that the list includes simple structures such as a water fountain, but may also one day include Europe's largest Fascist building (Universidad Laboral in Gijón, which is still going through the listing process). A student researched how the public art in the city communicated a sense of Asturian place, by relating Asturian identity to its industrial past, to historical cultural practices and its nature, namely "paisaje y paisanaje."

Students with an interest in management researched the role of public policy and concluded that the ability of the Asturian government to facilitate economic and social change was a function of state capacity. Some students illustrated state capacity by focusing on the role of state-owned enterprises as leading entrepreneurs that steered the business sector away from fossil fuels (the closing of the coal mines) into renewable sources by using the water from the mines to heat and cool the buildings. A student interested in immigration researched the work of the regional and municipal governments to attract immigrants from other countries in the European Union and beyond willing to settle in Asturias.

4. Lessons Learned

Our experience teaching "Building the Green Paradise" was informed by and validated some of the scholarly literature that served as a basis for its conception. The constructivist hypothesis that the members of our group would socialize themselves into embracing a single case study to understand and illustrate sustainability was proven correct. All of the students appreciated Asturias as a critical case study in sustainability, given the interrelation of sustainability-focused initiatives across different actors in society, from government (local as well as regional) to industry, the education system, and non-profits.

The claim by experiential-learning theories that students are more likely to achieve a deeper understanding of their subject of study when exposed to real-life situations was also validated. While at first the students raised reservations about a potential sampling bias in our choice of informants, their competence in visual sociology afforded them the opportunity to continue to do research on their own while simply walking through the physical spaces they found themselves in. The

public art, buildings, nature, industrial landscapes, recycling posters in the dorm building, information boards at the UNESCO heritage sites, and other sources of data allowed students to collect many testimonials that reinforced the pervasiveness of a sustainability focus across actors. Using the week on the Beloit College campus to learn about data-mining methods and using these methods to find and analyze data regarding our college's sustainability practices gave them a foundation that they sharpened while on the ground in Asturias. It should be a habit they take with them through life.

Another important claim about experiential learning that was supported by our experience is the idea that learners who actively participate in experience-based research are more likely to reflect on their own experience and draw conclusions that they will apply in new situations. This was illustrated by the use of a comparative methodology in their final research papers to compare the Asturias case study to those of their home country or their industries of interest. In addition, several students also reflected about their own personal growth during the course and their ability to better sharpen their academic and professional goals.

However, our ability to facilitate student reflection was a bit shortchanged by our busy research schedule. Our original plan was to take thirty minutes to an hour at the end of each day's field research to guide student reflections upon return to the dorms. But we were in the field for eight to twelve hours per day and, when we returned to our residence, the signs of fatigue were evident. After the first two days of field research, we adjusted by keeping these sessions at around thirty minutes and cancelled a few when we got back to our residence at just about dinner time. We then began to build time for debriefing meetings while still in the field. These "debrief breaks" turned out to be quite positive. The breaks afforded each student a chance to rest and reflect on the day's findings. In addition, by sharing some of their preliminary thoughts while still in the field, students learned about each other's areas of focus and interest. They also realized that not all of the students collected the same data nor did they interpret the same data similarly. As they knew each other better as scholars and researchers, they began sharing notes (encouraged by the instructors), offered recommendations to each other, and became more intentional and more confident when conducting their own data-mining and analysis. They also created small groups to work together in their exploration of common areas of academic and professional interest.

This was critical for the development of relations with their informants. We stayed in a quaint hamlet of less than three hundred inhabitants in Parque Natural

de Redes, one of the sites on UNESCO's Biosphere Reserves, called Soto de Agues for five days. While there, we talked to scientists who built research labs in Soto. We met ecotourist entrepreneurs, tourists, and went hiking in the mountains to learn about the Atlantic rainforest ecosystem. While in town, we gave the students a few field research assignments to guide them through their own solo exploration of buildings and public places of historic significance. Some of these assignments required the students to talk to the locals, so we encouraged the students who did not speak Spanish to team up with those who did. As a result of these chance encounters, word spread through the hamlet that a group of college students was conducting research in town. Our innkeeper began to receive calls from locals who invited the students to come to their homes or to the bar for conversation.

Some of the neighbors who volunteer to keep the historic public buildings such as the little chapels, the church, the public fountains, and some of the historic houses (the "teacher's house," the "doctor's house," "the smith's," "the mill," etc.) borrowed the keys and invited the students to see the buildings from the inside. From these "local partners" the students learned that the people of Sobrescobio (the municipality that Soto de Agues belongs to) "bought their freedom" from the local lords in 1565 and went on to develop a system of collective ownership and management of the forest and other natural resources. The inhabitants also contributed funds and labor to build and keep the places of worship and houses for the teachers and doctors, the public fountains, and the bridges, among others. This tradition of shared governance remains today. The students were impressed to learn through first-hand accounts how proud the locals are of this unique history of relation to place, which UNESCO has recognized.

Our students' experience supports the claims by Ficarra (2019) that local partners abroad are the best teachers if they are first learners of our students' needs and adjust their offerings to meet those needs. Our course did not rely on a traditional institutional local partner to offer content and organize site visits. The instructors organized these visits by reaching out directly to the informants. However, our experience supports Ficarra's claim that our students learned most from our informants when the format of our exchange was a two-way conversation, as opposed to a presentation. When talking to the students, our partners tailored their answers to the students' comments and questions, focused on the areas of student interest, clarified misperceptions, etc. This format allowed us to reduce conflict and address issues of power and privilege by turning potentially extractive learning relationships facilitated by a contracted international education provider

into student-centered partnerships with the locals (Holloway et al. 2019). We achieved this by bypassing the international education organizations, building instead on the instructors' knowledge of the subject of study and their ability to reach out directly to local informants.

Co-creation, peer-to-peer teaching, and learning partnerships with professors and informants, as predicted by Bovill's (2020) "whole-classroom approach," also happened. Some of the students worked in groups when conducting field research because of their shared interest in culture and the preservation of historic buildings. Business majors focused on understanding the impact of sustainability on profitability, revenue, return on investment, and client decisions, among other factors. Students with a focus on political science were fascinated to discover that the Asturian regional government and most of the municipal governments of the cities we visited were run by a broad coalition of parties whose political platforms and agendas were different, but they focused on areas of consensus, such as their eagerness to make Asturias a successful economic region and a true "cultural and natural paradise," as spelled out by the region's tourist slogan.

While spending time in Parque Natural de Redes, the students interacted with the locals directly, and many of them were invited by the locals for further conversation, as discussed above. The students reported that some of the most meaningful conversations happened while visiting some of the historic churches, or around a meal or a drink, especially the local cider. Without a doubt, our students experienced how these relationships facilitate collaboration, free thinking, and original research, and reported significant student growth, both as a researcher as well as a person. In addition, the relationship between the community and our college was strengthened. Our informants encouraged us to reach out to them in the future and bring more students if Beloit College decides to run the course in future years.

The thematic focus on sustainability and the choice of two professors from different divisions to lead the course, also supported the claim that theme-focused courses facilitate both interdisciplinary inquiry and learning, particularly the "4C skills: cooperation, creativity, communication, and critical thinking." Evidence of this has already been highlighted above with respect to student learning. Both teachers learned from each other and about each other. They shared the tools and methods that their respective disciplines bring to the table for the study of complex issues such as environmental and sustainability concerns. And they came back with new creative ideas for future iterations of this course or other ones.

Finally, our experience validated the claim that short-term faculty-led study abroad courses can have a positive impact on students' global competencies, which was one of the key intended goals of our course, as well as the focus of all other Global Engagement courses offered by Beloit College. First-generation heritage speakers (of Spanish, in our case) came away with additional insights about the diversity of the Spanish language across countries and continents. The standard European Spanish used by our informants was quite different from the Spanish they grew up speaking at home in the U.S. As a result, even low-stakes conversations led to confusion at times. In addition, our informants were highly educated and used very technical scientific terminology in Spanish, specific to their fields of research and professional activities. The importance of preparing heritage speakers for these challenges became very clear, so that they do not expect as much linguistic and cultural familiarity and prepare themselves for a learning environment that will be culturally challenging for them.

5. Concluding Thoughts: Theory-Driven Course Design and Learning Outcome

The students, based on their field research, confirmed Audretsch's hypothesis about the important role of finding a strategy for managing place at the regional and local level. Some of the most engaging conversations the students had during our debriefing meetings and during discussions of their final papers revolved around topics such as whether a sense of place needs to come before the strategy is developed, how to bring all of the stakeholders together, how the discourse of place evolves through time as the community changes economically, socially, as well as culturally. Their choice of final projects was partly informed by the students' academic fields of expertise and professional goals, but they also gave great consideration to the need to test these hypotheses about place in their individual projects.

Building a short course on a single working hypothesis gave us the opportunity to keep all of the students focused on the same page. It also helped us offer depth of analysis. The students did not just describe what they saw, they had to choose the subject of their research. To do this, they were forced to build a working relationship with their peers, with the instructors, and with their informants, growing more confident every day. The students also had to decide what constituted "data" in the context of their own research. Not everything they heard or

saw was relevant to their interests. Learning how to select the right data will help them grow to become independent researchers, capable of conceiving of their own original research projects. The students also learned deductive reasoning via hypothesis-testing. Finally, and based on the number of times that the students heard and used the phrase "paisaje y paisanaje," it is fair to conclude that one of the main lessons they will remember is how sustainability is rooted in the ability of a community to choose its unique strategy to cultivate and manage their place in ways that support a healthy relationship with their environment.

References

Audretsch, D. B. 2015. *Everything in its Place: Entrepreneurship and the Strategic Management of Cities, Regions, and States*. New York: Oxford University Press.

Bada, S.O. and S. Olusegun. 2015. "Constructivism learning theory: A paradigm for teaching and learning." *Journal of Research & Method in Education* 5(6): 66–70.

Bovill, C. 2020. "Co-creation in learning and teaching: the case for a whole-class approach in higher education." *Higher Education* 79: 1023–1037.

Brewer, E. and C. Ogden, eds. 2019. *Education Abroad and the Undergraduate Experience. Critical Perspective and Approaches to Integration with student Learning and Development*. Sterling, VA: Stylus Publishing.

Deardorff, D. K. 2006. "Identification and Assessment of Intercultural Competence as a Student Outcome of Internationalization." *Journal of Studies in International Education* 10(3): 241-266.

Farashahi, M. and M. Tajeddin. 2018. "Effectiveness of teaching methods in business education: A comparison study on the learning outcomes of lectures, case studies and simulations." *The International Journal of Management Education* Volume 16, Issue 1: 131-142.

Ficarra, J. 2019. "Local Partners as Teachers and Learners in Education Abroad. Introducing a Local Engagement Process Model." In E. Brewer and C. Ogden (eds.), *Education Abroad and the Undergraduate Experience. Critical Perspective and Approaches to Integration with student Learning and Development*. Sterling, VA: Stylus Publishing, pp. 229-240.

Fisher, C., L. Iverson Hitchcock, S. Moak, A. Neyer, S. Moore, and S. Marsalis. 2023. "Does Faculty-Led Short-Term Study Abroad Improve Students' Global Competence? Findings from a Systematic Review and Evidence Gap Map." *Frontiers: The Interdisciplinary Journal of Study Abroad* 35(1): 417-452.

Florida, R. L. 2002. *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*. New York: Basic Books.

Garrido Rodríguez, Adela. 2025. Gijón Impulsa (City of Gijón.) Interview conducted in Gijón, Parque Científico y Tecnológico, May 29, 2025 11:00am.

Holloway, K., L. Chieffo, R. Kurtzman, and C. Ogden. 2019. "From Transaction to Relational. Realigning Partnerships Between Higher Education Institutions and International Education Organizations." In E. Brewer and C. Ogden (eds.), *Education Abroad and the Undergraduate Experience. Critical Perspective and Approaches to Integration with student Learning and Develop-*

ment. Sterling, VA: Stylus Publishing, pp. 241-254.

INE 2025. Instituto Nacional de Estadística (Spanish Bureau of Statistics). Available online at www.ine.es (Accessed July 31st, 2025).

Kong, Y. 2021. "The role of experiential learning on students' motivation and classroom engagement." *Frontiers in Psychology* 12: 771272.

Poncela, Nacho. 2025. "La industria asturiana acelera en I+D y se posiciona en defensa y aeroespacial." *Cinco Días* Available online at: https://cincodias.elpais.com/extras/asturias/2025-05-29/la-industria-asturiana-acelera-en-id-y-se-posiciona-en-defensa-y-aeroespacial.html#:~:text=La%20industria%20asturiana%20acelera%20en%20I+D%20y%20se%20posiciona%20en%20defensa%20y%20aeroespacial (Accessed August 1st, 2025).

Porter, M.E. 2000. "Location, Competition, and Economic Development: Local Clusters in a Global Economy." *Economic Development Quarterly* 14(1): 5-34.

Pumariega, Ángela. 2025. Vice-Mayor of Gijón. Interview conducted in Parque Científico y Tecnológico de Gijón. May 29, 2025 11:00 am.

Savicki, V. and M. V. Price. 2019. "Reflection as a Tool in the Educational Continuum." In E. Brewer and C. Ogden (eds.) *Education Abroad and the Undergraduate Experience. Critical Perspective and Approaches to Integration with student Learning and Development*. Sterling, VA: Stylus Publishing, pp.165-180.

Sekuens. Agencia de Ciencia, Competitividad Empresarial e Innovación del Principado de Asturias. 2025. *Asturias Económica. Enero 2025*.

Unamuno, Miguel de. 1933. "País, Paisaje y Paisanaje." *Ahora* August 23: 7.

UNESCO. 2003. "Convention for the Safeguarding of the Intangible Cultural Heritage." Available online at: https://www.unesco.org/en/intangible-cultural-heritage (Accessed on July 25, 2025).

UNESCO World Heritage Center, 1992-2025. "World Heritage Convention. The Criteria for Selection." Paris, available online at: https://whc.unesco.org/en/criteria/ (Accessed July 25th, 2025).

United Nations. 1987. *Report of the World Commission on Environment and Development: Our Common Future* New York: 41. (Also referenced as Brundtland Report).

Ye, P. and X. Xu. 2023. "A case study of interdisciplinary thematic learning curriculum to cultivate "4C skills". *Frontiers in Psychology* 14: 1080811.

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