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Established in 1934 to increase exports and promote economic growth, foreign-trade zones have expanded across the U.S. and have become an integral part of local economic policy. A progenitor to modern place-based economic policy, the foreign-trade zone reflects modern neoliberalism and capitalism: free-market principles applied on a limited spatial scale and offered to a small number of firms. While the zone program occurs in every state in the U.S. and is inextricably tied to space, few geographers have analyzed its impact on historical and spatial development patterns. Using a mixed methods approach, this dissertation critically evaluates the historical and spatial evolution of the zone program, statistically analyzes the impact of foreign-trade zones on spatial and temporal economic growth patterns, and analyzes the economic and external impacts of Foreign-Trade Zone No. 82 on local development in Mobile, Alabama. Since it was first proposed in 1894, the foreign-trade zone program has been used as a tool by corporate actors to consolidate control over trade in the U.S. Through the use of information management, propaganda, and control over elected officials and bureaucrats, several prominent robber barons and corporate consortiums were able to create a place-based mechanism to increase profits and market control. Statistical evidence suggests foreign-trade zones have impacted spatially uneven development patterns and negatively affected the periphery in the process. Interview and observational data in Mobile suggest the zone program has largely benefited big business at the expense of small businesses, neighboring minority communities, and local ecology.

THE IMPACT OF FOREIGN-TRADE ZONES IN THE UNITED STATES

by

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DEDICATION

This dissertation is dedicated to my parents and extended family in Colorado and Wyoming for all of their support throughout this process. Without my mother and father proofreading my work and providing feedback and support, this dissertation would not have been possible. My Grandmother Jean and Uncle Chuck supported me the entire way. I only wish my Grandfather Lane and Clint were still around to see me finish. I love you all and thank you from the bottom of my heart for all you have done for me over the years.

APPROVAL PAGE

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CHAPTER I: INTRODUCTION TO FOREIGN-TRADE ZONES

Background

Trade liberalization has come to the forefront of modern discourse in recent years, as more people have expressed concerns over its impact on the domestic economy. However, a spatial form of trade liberalization first began in the United States in the late 19th century as an attempt by prominent industrialists to control trade on Long Island, New York. A free port was first proposed to congress by railroad magnates Charles Pratt, Austin Corbin, Watson Dickerman, and George Edgell in 1894 (H.R. 7009, 53rd Cong., 3rd Sess., 1894). The plan failed to pass in Congress but it set a precedent for future attempts by major business tycoons to promote free trade for a select group of beneficiaries. From 1894 until 1934, the free port debate would be managed by major forces in media, government, and private business until it was eventually passed during the Great Depression. Prominent financial organizations, businessmen, and professional business organizations used their connections with bureaucracies, congressional members, and major news organizations to persuade congress to act. During the early period of debate (circa 1912 to 1920), it became clear to supporters that the term 'free port' was unpopular to congressional members and the business community at-large (Morris, 1939). The name would officially change to 'foreign-trade zone' in 1921 in an attempt to disguise the nature of the policy program (S. 2391, 67th Cong. 1st Sess., 1921). In actuality, the bill was virtually the same as previous bills using the term 'free port', with minor changes made to the language of the bill. Even with the name-change, foreign-trade zones would not pass congress until the Great Depression forced congressional members to act.

The Foreign-Trade Zone Act was passed along party lines and signed into law by President Franklin D. Roosevelt on June 18, 1934. The new program created a distinctly

geographical phenomena whereby corporations or local governments could apply directly to the newly created Foreign-Trade Zone Board, a subsidiary of the Department of Commerce, for inverted tariff benefits. Firms within these zones could avoid tariffs on raw or processed materials and manipulate those materials for re-export without paying duties (19 U.S.C. § 81a-81u, 1934). The original zones were limited in scope and did not allow for manufacturing. However, subsequent changes to the Act would allow for manufacturing (Pub. L. No. 397, 48 Stat. 998, 1950). The Boggs Amendment was passed in 1950 and was designed to attract manufacturers to the zone program. Two years later, the Board would claim that the Boggs Amendment granted it the authority to establish special-purpose zones, or subzones, for the purpose of extending zone benefits to manufacturing firms located beyond the 60-statute mile limit designated by the original Act (17 Fed. Reg. 5316, 1952).

Even with the inclusion of manufacturing and the creation of subzones, the number foreign-trade zones remained relatively low for the next three decades. It would be the clarification of how duties were applied to goods entering and exiting zones that would result in an exponential growth of general-purpose zones and subzones between 1982 and 2000 (Lomax, 1947). Major financial firms began to take advantage of property within foreign-trade zones, some with links to the very organizations that promoted the zone program from the beginning. As a result, zones grow both in scope and size but predominantly clustered in large urban coastal centers with the petroleum industry as the largest beneficiary (see Chapter II). Today, 16.5 percent of all active zones are located in the northeastern portion of the U.S. and 85.8 percent of zones occur in metropolitan regions (Ross & Mnuchin, 2019; U.S. Census Bureau, 2018a). Efforts to promote the foreign-trade zone program by major business groups, financiers, and industrialists resulted in a net benefit to large transnational corporations, affording them a

competitive advantage over smaller firms. As a result, foreign-trade zones are unevenly distributed across the country, largely clustered in wealthy urban centers along major transnational shipping lanes (see Chapter II).

Since its creation, the foreign-trade zone has become a quintessential part of industrial promotion policies in major port cities throughout the country. While a major tool for promoting local trade, few scholars have analyzed the impact of the zone program on development patterns in the U.S. Early studies on the topic largely focused on the benefit of zone-usage on the individual firm. While there were some disagreements on how zones affect profit margins, most of these studies concluded that firms would receive a net benefit in the long-term and gain a competitive advantage over similar firms (Aron, 2002; Beeman & Magill, 1988; Hanks & Van Alst, 1999; McDaniel & Kossack, 1983; Robles & Hozier, 1986; Sullivan 2000). While important to the study of foreign-trade zones, these studies overlooked the potential negative impacts on non-FTZ firms. To address these concerns, Kanellis (1995) argued that the stringent requirements required by the Foreign-Trade Zone Board could overwhelm small businesses and act as a regulatory barrier of entry.

While originally designed to increase exports, provide a competitive advantage for U.S. firms, and promote development (Foreign-Trade Zone Board, 2018), some scholars have argued that foreign-trade zones have failed to deliver on promises to promote exports (Mathur & Mathur, 1997; Seyoum, 2017; Seyoum & Ramirez, 2012). According to Mathur and Mathur (1997), while "some FTZs are created with the intent of boosting exports, most are formed after exports have increased" (p. 26). In some cases, foreign-trade zones resulted in a net increase of imports instead of exports (Seyoum, 2017). To address these claims, the Congressional Research Service (CRS) issued a report claiming that the zone program had resulted in an increase in

exports solely because the intent of the program had changed (Bolle, 1999). Whether or not this sentiment is true, is unclear if the foreign-trade zone program has accomplished its goals of boosting trade.

Another important goal of the zone program was to promote development. However, as with exports, scholars disagree over the efficacy of the program in encouraging economic growth. Head, Ries, and Swenson (1999) concluded that foreign-trade zones have had a positive impact on foreign direct investment (FDI) from Japanese firms. It appears that FDI may be a necessary function for the success of foreign-trade zones, as Hamada (1974) concluded that without it, these zones are ineffective at promoting economic growth. While FDI is a major topic in modern economic theory, some scholars contend that it may not provide a net benefit to local development (Magombeyi & Odhiambo, 2017). In a moment of clarity, Bolle (1999) indicated that the increase in the number of zones in the 1980s corresponded with a 1.9 percent decline in automobile manufacturing jobs. NAFTA further complicated the matter the following decade. However, because foreign-trade zones are a purely geographic phenomenon, location matters. Miyagiwa (1993) concluded that foreign-trade zones in rural areas had a significantly greater economic effect than urban areas, indicating diminishing returns in net benefits. Other researchers argued that the establishment of foreign-trade zones can result in spillover into non-manufacturing firms (Ghosh, Reynolds, & Rohlin, 2016). While these studies are important in understanding the impact of foreign-trade zones, few scholars have critically evaluated the historical and geographical development of the zone program, analyzed its spatial and temporal impacts on economic development patterns, and qualitatively analyzed economic and external costs on the local scale

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Theoretical Framework

Discussed in greater detail throughout this dissertation, foreign-trade zones have been used as a tool by corporate leaders and the U.S. government to subsidize large industrial producers at the expense of small businesses. The existence of the zone program reflects the nature of modern capitalism and neoliberal trade policy: private corporations working directly with the state for the benefit of the few. During this process, market benefits extended to small list of corporations ultimately requires "the active mobilization of state power" (Brenner & Theodore, 2005, p. 102). The zon3e program is unique to other domestic economic policies, as it theoretically designates a portion of domestic territory as foreign. As stated by Congressman Emanuel Celler, "the foreign-trade zone for all intents and purposes is foreign territory" (Celler, 1946). Tied to the landscape, foreign-trade zones exist beyond the control of the average citizen behind barbed-wire fencing. A contradiction in both space and policy, a zone exists as concrete space with strict policy governing its daily activities. The space itself represents neoliberal philosophy; frictionless production and trade beyond the regulation of the state. But in a larger context, it is imprisoned within the surrounding landscape by customs policy governing its behavior beyond the zone. Each zone combines "alien institutions and policy regimes to create 'hybrid' institutional landscapes in which commodifying and market-constraining logics commingle and co-evolve" (Brenner, Peck, & Theodore, 2010, p. 189). In the process, a new type of governance has been created whereby public and private institutions work in tandem to master space.

Lefebvre (1974/1991) referred to the contradictory nature of space within the larger economic system as a concrete abstraction. Space is concrete, in that it exists and can be felt and touched; however, under modern modes of production, it can be used as "a means of control, and

hence domination, of power." As such, "the social and political (state) forces which engendered this space now seek […] to master it completely" (p. 26). The foreign-trade zone sits as a glaring example of state (and corporate) power. From the outside, these facilities appear like nothing more than industrial buildings with heightened security. Yet they represent the power to selectively enforce tax and tariff regimes based on corporate affiliation. The size of the firm and its relationship with the state has a profound impact on zone approval. As stated by Kanellis (1995), this process "seems much more directed by political pressure from private actors than by an independent consideration of what economically benefits the public" (p. 622).

The relationship between the state and 'private actors' for control and dominance of concrete and abstract space is a spatial representation of modern economic policy. The foreign-trade zone program liberalized trade but confined it to only certain places for a small number of firms. Limited by space, these zones appear to be inconsequential to the larger economy. However, some of the largest corporations in the U.S. are beneficiaries of the zone program, including Marathon, ExxonMobil, BMW, Tesla, Valero Refining, Chevron, CITGO, General Electric, and Janssen Ortho (Ross & Mnuchin, 2020). The demarcation of space for the purpose of creating a new form of public/private governance is a form of place-based neoliberalism whereby democratic control is replaced with a fusion of corporate and state power. Brenner and Theodore (2002) argued that this represents the 'actual existing neoliberalism', a process by which the state takes an active role in decoupling democratic control of space and replacing it with a public/private power structure. According to Peck (2001), while proponents of neoliberalism espouse the benefits of market logic, in reality, the state takes an active role in policing neoliberalized space. The foreign-trade zone is a glaring example of the juxtaposition of the encroachment of state and corporate power and diminishing democratic control of space.

The foreign-trade zone is a program by which the state demarcates and redefines space for the benefit of a small number of individuals at the expense of the many. In a process that Orenstein (2011) referred to as "the partial denationalization of sovereign territory" (p. 37), the U.S. government has effectively given partial control of domestic territory over to private corporations. The term denationalization was first introduced by Sassen (1996) as a description of how states "lift border controls for the flow of capital, information, and services and, more broadly, to further globalization" (p. 94). However, other scholars have argued that 'graduated sovereignty' is a better representation of the unequal distribution of state control across space (Ong, 2000). Park (2005) applied this term to special economic zones in South Korea, a close cousin to the foreign-trade zone in the U.S. Others contend that deterritorialization is a better descriptor for uneven policy across space (Post & Calvão, 2020). This debate will be discussed in more detail in Chapter II and a clear description of this process will be determined.

Finally, the process by which the foreign-trade zone was created followed a logical path first outlined by Niccolò Machiavelli and later detailed by G. W. F. Hegel. Free ports and foreign-trade zones were largely unpopular prior to the Great Depression, so state and corporate actors had to manage the debate and exploit every opportunity to institute the program. Even after a series of name-changes, the foreign-trade zone bill would fail to pass a vote in congress. It would be the culmination of the Great Depression, one of the most repressive tariff regimes in history, the Smoot-Hawley Tariff of 1930, and a change in political party control in congress that would ultimately lead to the passing of the Foreign-Trade Zone Act. Following the advice of Machiavelli, congress would not "waste the opportunity offered by a good crisis" (Hill & Fenn, 2019). To Machiavelli, power and crises are inseparable. When faced with a seemingly insurmountable obstacle, effective leaders use the opportunity to further entrench their power

and control (Machiavelli, 1532/1991). The chain of events which led to the crisis and subsequent reaction was summarized by Hegel as a natural progression of power. Accordingly, an initial event occurs sparking an opposite reaction, resulting in the synthesis of the two (Hegel, 1837/2001). Under both paradigms, government and business exploited a crisis to institute a long-supported program from which both groups subsequently benefited. Acting as a concrete abstraction of both power and commerce, the foreign-trade zone represents the very nature of the current political/economic system.

Purpose and Focus

This dissertation is designed to explore the historical and geographical development and impact of foreign-trade zones on the national and local scale. Three separate studies were performed to answer the following research questions:

- Throughout the foreign-trade zone's development phases, who promoted the program and ultimately benefited from its implementation?
- What are the current spatial and temporal impacts of foreign-trade zones on economic development patterns across the United States?
- What are the local effects of the foreign-trade zone program in Mobile, Alabama and what are the external costs to its implementation?

Following a mixed methods approach, this dissertation analyzes patterns of growth, spatial and temporal impacts, and local effects using historical archival data, quantitative data, interviews, and observational data from a variety of sources. Historical data were gathered from the Library of Congress, the National Archives, Hathi Trust Digital Library, Alabama Department of Archives and History, and Newspapers.com. Quantitative data were compiled from the Foreign-Trade Zone Board's Online FTZ Information System (OFIS), the Census Bureau's American

Community Survey (ACS), and Infogroup's infographic data provided by ESRI ArcMap's Business Analyst software. Interviews and observations were performed in situ in Mobile, Alabama.

This dissertation is organized in a three-article dissertation format. Each chapter is structured as an independent study prepared for publication. Therefore, each article contains a separate abstract, introduction, body, and conclusion. Because methodologies differ for each article, structure and length vary based on the methods used. Temporal inconsistencies occur due to this format and the length of time needed to write this dissertation. For example, the quantitative chapter was written in 2017 using spatial data published in 2016 and temporal data from 2009 until 2016. A portion of this chapter was published in the *Southeastern Geographer* in 2021. However, the case-study chapter on Mobile was written in 2021 using data and interviews taken that same year. While there are some temporal inconsistencies, this dissertation is written so that each chapter flows with preceding chapters with minimal redundancies. The second chapter following this introduction analyzes the historical and geographical growth of foreign trade zones and their beneficiaries; Chapter III analyzes current spatial and temporal impacts of zones on economic development patterns; and Chapter IV analyzes the economic and external impacts of the foreign-trade zone on the local community in Mobile, Alabama. Overall conclusions are discussed in Chapter V. Bibliographies from each independent article were combined into a single reference section at the end of this dissertation.

CHAPTER II: HISTORICAL AND GEOGRAPHIC DEVELOPMENT OF FOREIGN-TRADE ZONES ACROSS THE UNITED STATES

Abstract

Neoliberalism has been discussed ad nauseam by scholars with few agreeing on its application in modern policy. Some argue that neoliberalism is based in free market principles while others argue state intervention is a necessary function. Place-based neoliberalism is indicative of the contradictory nature of neoliberalism, as it represents a market-based policy program which requires strong state control. One form in particular, the foreign-trade zone, has been in use since 1934 and has provided an avenue for a limited number of large corporations and urban centers to achieve a competitive advantage over smaller firms and periphery regions throughout the United States. Through the use of information management, propaganda, and control over elected officials and bureaucrats, several prominent robber barons and corporate consortiums were able to create a place-based mechanism to increase profits and market control. This chapter critically analyzes the collusion between corporate and state actors that led to the creation and subsequent growth of foreign-trade zones in the United States. It is this relationship that reflects the very nature of the economic system that exists across much of the world today.

Introduction

Free trade policy has been a contentious topic as of late, with public clashes over protective tariffs and disagreements among policy experts as to the effect of free trade agreements on domestic productivity. However, a much more obscure form of free trade policy, established in the U.S. in the 1930s, preceded modern free trade agreements and provided a chosen group of corporations with duty-free benefits not extended to other firms. The foreign-

trade zone (termed free trade zone in other countries) is free trade manifested on a spatial scale. Boundaries are drawn around individual corporations and tariffs are removed on products while they are being manipulated in the zone (19 U.S.C. § 81c, 1934). Market benefits are extended to firms who successfully receive approval from the Foreign-Trade Zone Board. The process of applying for zone or subzone status is lengthy, with an extensive list of rules companies should follow (15 C.F.R. § 400.21, 2012). This process, along with relative obscurity of foreign-trade zones, results in a small number of firms benefiting from this place-based program. Foreign-trade zones are just one example of how neoliberal free trade policy can be manifested in spatial form.

Neoliberalism has been used to describe the current paradigm promoted by the U.S. and U.K governments. According to Bockman (2013), this term found its origin in the 1930s to ensure continued free exchange of goods and services while maintaining minimum state intervention. However, implementation of these ideals did not occur on a large scale until the 1970s. Of course, neoliberal free trade policy is nothing new. Free ports were created by the Roman Empire in Delos, Greece in order to promote frictionless trade throughout the Mediterranean Sea (Easterling, 2016). In the United States, the modern form of free ports took the form of foreign-trade zones in 1934 (Thoman, 1952). While not explicitly defined as neoliberal, foreign-trade zones would be implemented as a state supported and controlled form of 'market-oriented' infrastructure space well-before the term neoliberalism was used on a wide-scale.

Place-Based Neoliberalism, Uneven Development, and Denationalization

Since the establishment of the foreign-trade zone, a complex system of governance has developed whereby sovereignty and territoriality are shared amongst powerful state and

corporate actors, with very little input from the average citizen. Swyngedouw (2011) claimed this system was "concerned with policing, controlling and accentuating the imperatives of a globally connected neoliberalized market economy" (p. 3). Under this paradigm, the average citizen has been virtually removed from the process of governance and replaced with a post-democratic form of control. An important part of this process is the transformation and neoliberalization of space. According to Peck and Tickell (2002), the Washington Consensus has become the dominant mode of economic development proposed to the developing world by the Anglo-American establishment. Free trade and free-markets are proselytized to countries across the Global South. In action, however, the free-market fetishism is nothing more than a misnomer, as "neoliberals have proved adept at the (mis)use of state power in the pursuit of these goals" (Peck & Tickell, 2002, p. 381). If the Chicago School and the Washington Consensus is so concerned with the separation of the state from the market, why is state power and its monopoly on force used to implement these strategies? It is the use of state power to neoliberalize space that presents the seemingly contradictory nature of the modern political economy: the state must have ultimate control over space in order for the market to work in its favor.

Place-Based Neoliberalism

Nowhere is this contradiction more prevalent than the foreign-trade zone. Used as a means of reducing duty regulations on goods entering the domestic market, the zone represents the ultimate authority of the state to remove its own authority for the benefit of corporate hegemony. Unlike claims that neoliberalism "rests on a pervasive naturalization of market logics" (Peck & Tickell, 2002, p. 394), the state must construct artificial boundaries around the marketized foreign-trade zone space in order to ensure its success. It's this contradictory state that Orenstein (2011) argued was the "default mode of economic development in the

International Monetary Fund (IMF) playbook" (p. 37) or the Washington Consensus. The oversimplification of neoliberalism as the promotion of markets over state power in the economic process has resulted in a lack of nuance within the debate. Harvey (2005) notes that under neoliberalism, the "role of the state is to create and preserve an institutional framework" that protects "private property rights, free markets, and free trade" (p. 2). The focus on markets alone as the driving force behind neoliberalism overlooks the power of the state to implement these principles. As argued by Peck (2001), the "neoliberal state is not necessarily a less interventionist state; rather, it organizes and rationalizes its interventions in different ways" (p. 447). Without the state in its current form, programs like foreign-trade zones would not form naturally.

Brenner and Theodore (2005) begin to broach this subject when they contend that neoliberalism is "a process of market-driven social and spatial transformation". However, what entity is driving this transformation? For neoliberalism to transform society and space, it requires "the active mobilization of state power" (p. 102). The result is a process by which the state safeguards the market from democratic forces to ensure certain actors benefit. To Brenner and Theodore, the implementation of neoliberal processes results in the expulsion of sociocultural forces which might constrain capital accumulation amongst its beneficiaries. Spatial factors can also play a role in this scheme. The zone itself provides concrete boundaries which protect the market-based institutions from sociocultural forces that may breakdown its control of space. The zone also lends credence to the argument that neoliberalism presents itself as a spatially selective political strategy. According to Jones (1997), the "state has a tendency to privilege certain places within accumulation strategies, state projects, and hegemonic projects" (p. 855). Each zone is

given the means of economic growth and control of outputs and inputs not leveed to other spaces.

One might argue that the state has demarcated a particular space as a privatized enclave for the purpose of capital accumulation. In the words of MacLeod (2011), the state has created "an archipelago of immaculately conceived privatised 'public' spaces, territorial fiefdoms and informal reservations and their undulating but vastly asymmetrical circulations of power, privilege and entitlement" (p. 2632). In the process, the state has redefined the meaning of public benefit to include economic growth over non-economic social benefits. The public benefit litmus test outlined by the Foreign-Trade Zone Board reflects arguments made by MacLeod. Public benefit is defined solely by economic factors and whether the establishment of a zone will provide enough of a cost reduction to local firms to "improve their international competitiveness" (56 Fed. Reg. 50790, 1991). Under this new definition, the state has recategorized public as corporate competitiveness. Therefore, the rationale for establishing a zone in a particular area is determined by its ability to improve a firm's competitiveness on the international stage, not how the zone will impact public welfare.

However, the zone differs from MacLeod's definition of neoliberalized space in a very important way. The state has not privatized the zone per se. The program is backed by the full power of the state. Most foreign-trade zones are established by public corporations whereby operations and activities are regulated within certain parameters outlined by the Foreign-Trade Zone Board (15 C.F.R. §400.12, 2012). Private firms are free to operate under those parameters but the zone is owned as a partnership between local governments and private firms. Within the zone program, the state has not simply given up control of space to a corporation, it has created a completely new space of shared authority. One could view this process as a partial privatization

of public space, but in reality, it presents itself as a convoluted form or public/private space. Public in the sense that the state has ultimate control and private in the sense that private firms economically benefit from activities within the zone. Similar to arguments from Brenner, Peck, and Theodore (2010), these zones are implemented by combining "alien institutions and policy regimes to create 'hybrid' institutional landscapes in which commodifying and market-constraining logics commingle and co-evolve" (p. 189). Specific language in zone regulations requires that each zone operates as a public utility (15 C.F.R. §400.42, 2012); however, the average person is not able to freely access this public utility. The state has used its authority to define a space as a public utility under the rationale of its public benefit, yet public benefit is defined by its impact on profit margins and access is limited to a small group of people associated with the zone. This neoliberalized space is much more than simply the privatization of space, it's a completely separate form of governance.

This new form of governance was described by Brenner and Theodore (2002) as a "public–private partnerships and 'networked' forms of governance" created in response to the purposeful "[d]ismantling of traditional relays of democratic control at national and subnational levels" (p. 365). To Brenner and Theodore, neoliberalism had formulated the restructuring of local governance to ensure profit maximization for the wealthy capitalist class. This transformation can take many spatial forms. MacLeod and Johnstone (2012) described the creation of enterprise zones in the U.K. as a spatial form of neoliberalism where urban development corporations were "directly appointed by central government and with planning powers to acquire land in anticipation of 'leveraging' private sector input, but crucially bypassing local democratic control" (p. 5). The foreign-trade zone is just another example of how neoliberalism can be spatialized; it reflects the need for the state to create new geographies

of governance through the removal traditional democratic controls. In a critique of the zone approval process, Kanellis (1995) stated that anyone who wishes to contest the establishment of a general-purpose zone has only 60 days to make a case but subzone approvals are not required to hold public hearings. Additionally, when zone hearings do occur, they are often publicized to interested firms, not the average citizen, making it unlikely that people neighboring the zone are aware of its approval. Under these circumstances, the state apparatus is redefining space through the creation of a public/private partnership with very little transparency.

The form of public/private governance employed in a newly established foreign-trade zone reflects much of the same issues seen in free trade zones across the world. When discussing the neoliberal regimes of various zones, Neveling (2014) argues that these zones are often "under the authority of an agency that operates independently of government and is in charge of legal as well as policing matters" (p. 26). While this may not completely describe the nature of governing that occurs in the foreign-trade zone, it comes close to outlining the reality and presents an interesting perspective on the problem of transparency. When a zone is established, governing over operations is shared between the Foreign-Trade Zone Board, a local agency created for the specific purpose of managing the zone, and the private firm operating within the zone. Along with governance, security is the responsibility of the individual firm. U.S. Customs and Border Protection (CBP) has a strict set of guidelines for zone security, but ultimately it is the responsibility of the individual firm to secure its facility. At each step of the process, the average person is removed from the regulation of the zone.

Based on previous critiques of modern neoliberalism, the foreign-trade zone represents a type of place-based neoliberalism, or neoliberalized space. Per comments from Brenner and Theodore (2002), the state has designated a particular place for public/private partnership

governed separately from the normal democratic process. The importance of place should not be ignored, as access to a port of entry is necessary for approval of a general-purpose zone (15 C.F.R. §400.11, 2012). This type of place-based neoliberalism is contingent on accessibility to infrastructure created by the state. Though there is a type of privatization occurring within a zone, the act of separating space from others to improve the competitive advantage of a single corporate entity requires the pervasive power of the state to ensure its success. As stated by Brenner and Theodore (2005), "neoliberalism hinges upon the active mobilization of state power" (p. 102). For place-based neoliberalism to occur and succeed, the state must use its monopoly on force to conquer space, even if it eventually places control of space in the hands of private firms.

Uneven Development

The fusion of both private and public enterprise is a quintessential part of the U.S. economy that exists today. Agreements signed between the state and private firms, resulting in the creation of foreign-trade zones, form the basis of what Birch (2017, p. 183) called a "contract-based order", and this order has only exacerbated problems associated with uneven development. This public/private place-based model of development, like many other examples of neoliberalism, ultimately results in uneven development, a fact overlooked in early critiques of capitalism by Harvey (1982) and Smith (1984). To Harvey (1982), uneven development is the natural result of capital accumulation in urban centers and the capital flight from the hinterlands. Urban agglomeration attracts more capital, thereby exacerbating an already spatially uneven landscape. Capital then attempts to 'fix' the landscape to be more conducive to investment through the construction of infrastructure and the removal of barriers to capitalist production. Smith (1984) argues that the concentration of capital in certain regions is due primarily to the

tendency of capital to move to areas where profits are highest, resulting in the eventual decline of profitability in that region. As rents and wages increase profit margins decline, leading to a reorganization of capital to the hinterland where labor and land costs are much lower. Therefore, Smith argues, capital "attempts to seesaw from a developed to an underdeveloped area" (p. 198). While Harvey and Smith present valid arguments for uneven development, by placing the onus squarely on capital, both arguments overlook the involvement of the state in the concentration of capital in certain regions.

Foreign-trade zones present an interesting case-study on the marriage of the state and private corporations for the explicit purpose of uneven development. Various studies on the impact of foreign-trade zones on the economic landscape have concluded that the zone program has attracted foreign direct investment to certain regions, resulting in the agglomeration of various types of industries (Head, Ries, & Swenson, 1999; Bobonis & Shatz, 2007). The purpose of agglomeration is to cluster or concentrate certain industries in a particular region. By its very nature, agglomerating economies result in uneven development. As other scholars have concluded, place-based policies like foreign-trade zones (or free trade zones) often result in uneven development (Bair & Gereffi, 2003; Fan, 1997; Lane, 2020). The influence of foreign-trade zones on uneven development patterns was discussed in some detail by Lane (2020), who found that each zone has a significant impact on development patterns across the Southeastern U.S. The culmination of state authority and private firms has resulted in a significant clustering of wealth and employment around major urban structures, thereby exacerbating uneven development patterns already present.

When compared with Harvey's argument, the foreign-trade zone is a type of spatial fix whereby infrastructure is created to make space more conducive to capital flow. However, this

capital is not the responsible party in the spatial fix. The paradigm of place-based neoliberalism requires the state take an active role in the spatial fix, a type of power which private firms do not possess. As argued by Jessop (2000), "the state is so central to securing the spatio-temporal fixes in and through which relatively stable accumulation becomes possible" (p. 332). The result is a permanent structure bounded in space. Each zone acts as a beacon for investment, attracting capital away from other regions that do not contain the appropriate infrastructure. Therefore, the infrastructure, and those who built it, are as integral in the resulting uneven development as is capital accumulation. Smith (1982) argues that profit seeking itself is invariably the reason for further concentration of wealth; however, infrastructure space is well known to attract capital to certain regions. Therefore, the capitalist or profit-seeker is not the only variable which results in uneven development. The state plays an active role in creating spatial development patterns.

Denationalization, Deterritorialization, and Graduated Sovereignty

As discussed previously, the state has played a pivotal role in the creation of place-based neoliberalism. Through what Orenstein (2011) called "the partial denationalization of sovereign territory" (p. 37), the U.S. government has effectively given partial control of domestic territory over the private corporations. Sassen (2008) claimed that states use their power to provide meaning to territory by globalization or internationalizing space. Therefore, the purpose of the zone, beyond the goal of improving international competitive advantage, is "to produce an operational space partly embedded in particular components of national legal systems which have been subjected to specialized denationalizations" (p. 65). Under these circumstances, partial *denationalization* refers not to the removing of territory but to the reduction of national authority over the innerworkings of a particular place. The denationalization of territory is a process by which space is decoupled from the regulatory state thereby becoming part of a larger system of

corporate capital flows (Brenner, 1998b; Sassen, 1996). Sassen (2008) argued that the partial denationalization of territory has a direct relationship with economic globalization, whereby territory is not only denationalized but it is internationalized, lending credence to statements from Orenstein (2011) that "the local was global, in the sense that the free ports of Salina Cruz and Topolobampo connected Mexico directly to Shanghai and Lagos" (p. 48).

However, is denationalization an appropriate description for the foreign-trade zone program? The basic precept of place-based neoliberalism is the use of state power to diminish state economic power through the creation of a public/private enclosure space. Power over economic output relates directly to the idea of sovereignty. Ong (2000) argued that sovereignty refers not only to the state's ability to control a military and safeguard the integrity of borders, sovereignty also refers to the state's ability to regulate markets. In the state's attempt at promoting certain industries over others, or providing unequal benefits to a select group of companies, the state's regulatory sovereignty is not equally distributed. In what Orenstein (2011) described as the partial denationalization of domestic territory, Ong (2000) described as a form of *graduated sovereignty*, whereby the state has adjusted its regulatory sovereignty over economic activities in certain regions compared to the state as a whole. Ong (2006) later argued that the varied ways in which states apply their sovereignty results in a "checkerboard patterning of national terrain" (p. 499). Some areas, foreign-trade zones for example, are provided more political and economic resources than others. This may also extend to rights and entitlements associated with state citizenship. In the case of the foreign-trade zone, extra resources are extended to firms within the zone not extended to others. Additionally, merchandise produced within a zone, while considered foreign in terms of duties and tariffs, are officially labeled as

‘Made in the U.S.A’. A type of economic citizenship is provided to merchandise in a zone not extended to merchandise produced abroad.

A parallel example occurs in East Asian applications of free trade zones. Park (2005) extended the theory of graduated sovereignty to include special economic zones in South Korea, arguing that the state extends differential treatment to various economic institutions in which a type of corporate governance takes the place of traditional state control over sociocultural institutions. Accordingly, the state treats transnational corporations differently than the rest of the population due to their level of involvement in global trade and economic output. Therefore, the state extends a type of international citizenship beyond the confines of national territory. This lends credence to claims from Brenner (1998b) that “intensified globalization entails an erosion of state territoriality” (p. 8). But rather than the global city of which Brenner was discussing, the foreign-trade zone, through the implementation of graduated sovereignty, acts as a type of global place for business. A territory of networks is created beyond the sovereign control of the state where “much of the sovereignty is vested in a private corporation” (Nyíri, 2012, p. 535). While the state continues to control the territory within a foreign-trade zone, its sovereignty is reduced compared to surrounding territory.

While some scholars have contended that these zones offer graduated sovereignty compared to surrounding territory, the process by which the state designates these specific zones is a form of *deterritorialization*. According to Post and Calvão (2020), place-based neoliberalism “entails the deterritorialization of the state and diminished control over its territory, although it simultaneously points to the further internationalization of the state and the transnationalization of state sovereignty in the exercise of extraterritorial power” (p. 4). This explanation exemplifies what Storper (2004) argued is the current paradigm in territorial control whereby states

deterritorialize part of the landscape and extend control of space to "intrafirm international corporate hierarchies or international markets" (p. 271). Accordingly, deterritorialization of the economy is part of a larger trend of state institutions privatizing formerly public methods for economic development. Munro and Thanem (2018) went further, arguing that capitalism, by its very nature, deterritorializes space in favor of corporate colonization. Deterritorialization is then followed by reterritorialization based on consumption. These arguments stem from arguments by Brenner (2004) that the process of deterritorialization is closely associated with the integration of a global community and the promotion of capital accumulation. Part of this process has been the establishment of place-based neoliberal policies such as the Maquiladora in Mexico. Raffestin (2012) agrees with Brenner, arguing that the hypermobility of capital leads to a process of constant change. As capital is introduced to a new space, it transforms space to be more conducive to capital accumulation. Once resources (natural or human) are used up, deterritorialization of capital occurs.

To Elden (2005), deterritorialization is a process by which cultural identity and language has been detached from space by global forces. This process permanently changes cultural and national identity and fuses the local with the global. Brenner (1999) agrees that globalization has resulted in the deterritorialization of cultural and national identities but argues that this has resulted from increasing flows of information and capital, thereby detaching local culture from the landscape. To Tuathail and Luke (1994), deterritorialization occurred as a result of the reshaping of geopolitical boundaries post-Cold War. The changing world order after the dissolution of the Soviet Union deterritorialized former American alliances and reterritorialized new alliances. Brenner, Jessop, Jones, and MacLeod (2003) combine each of these arguments by

stating that the flow of people, culture, social institutions, and goods across state boundaries are all part of a larger process of deterritorialization exacerbated by globalization.

The establishment of foreign-trade zones across space in the U.S. has been a result of the reorganization of control and order across space. By dissolving part of the state's control over economic production within a zone (i.e., the removal of duties), the state has given up some sovereignty over operations. However, the state still has ultimate authority over zone operations, although shared with individual firms. Therefore, graduate sovereignty does not best describe the nature of the zone program. When used to describe special economic zones in South Korea, Park (2005) argues each zone represents the concept of graduated sovereignty due to the reduction of regulations and removal of state authority in favor of corporate control. Under these circumstances, the corporation has greater sovereign authority over individual workers. While firms in foreign-trade zones retain some authority over space, they do not hold sovereignty over the individual worker.

As with graduated sovereignty, deterritorialization does not adequately describe the nature of the foreign-trade zone. Some authors have approached the subject of deterritorialization from the perspective of global capital flows. While this argument has merit, it is generally applied to large scale globalization of economic processes. For example, Brenner (2004) contends that capital flows and subsequent accumulation result in the deterritorialization of sociocultural attachment to space. While some authors have discussed deterritorialization in relation to global capital flows, others have argued that contemporary trends in globalization have resulted in sociocultural deterritorialization (Elden, 2005; Luvaas, 2009; Papastergiadis, 2000; Poli, 2007). Therefore, the broad application of the term deterritorialization does not properly describe the process by which state institutions demarcate foreign-trade zone space.

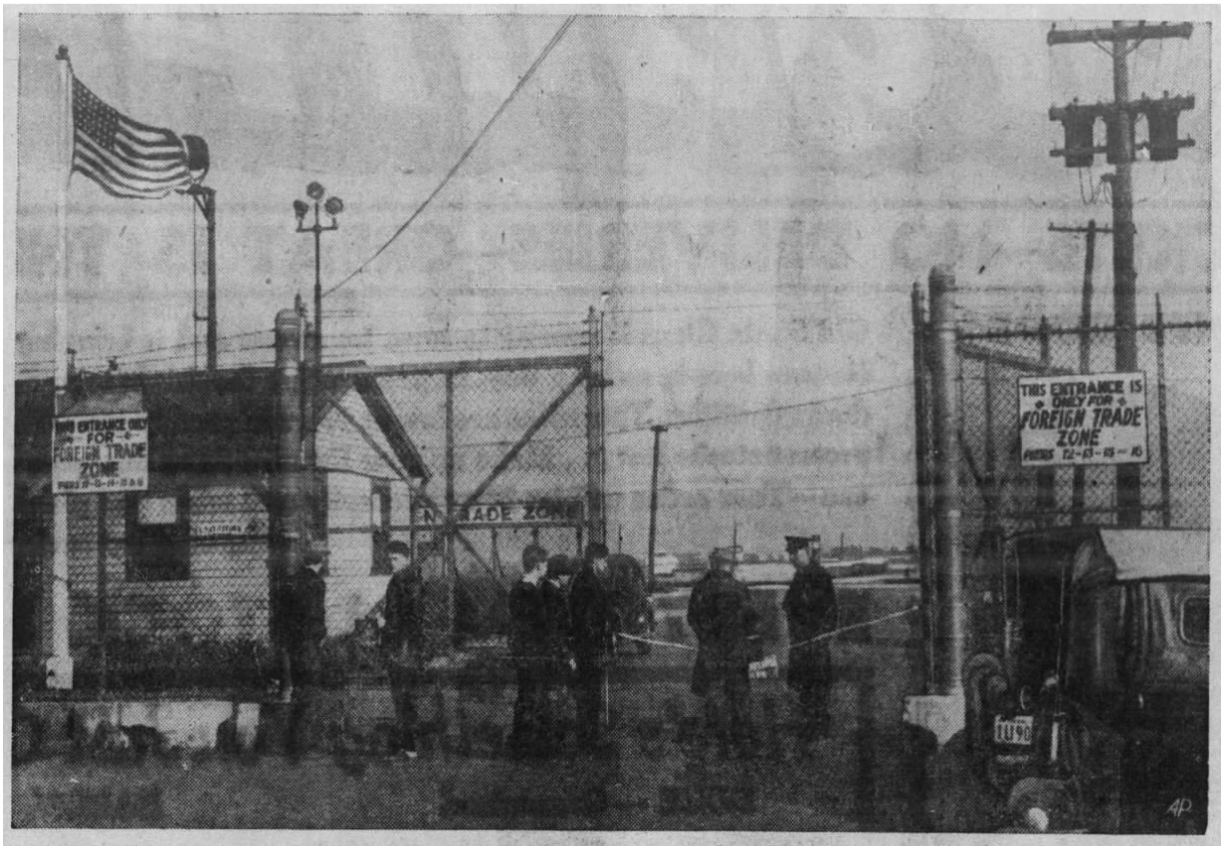
Arguments from Sassen (1996) that modern capitalism is exemplified by state authorities denationalizing controls over capital flows, services, and information best describe the nature of the foreign-trade zone. Orenstein (2011) agreed with Sassen's theoretical argument, stating that the foreign-trade zone is an example of a *partial* denationalization of space through which capital and products could more easily flow. According to Brenner (1998b), "this alternative theorization of globalization as a process of denationalization provides a useful methodological starting point for overcoming both state-demise arguments and zero-sum conceptions of spatial scale" (p. 12). While not a complete denationalization of territory, the foreign-trade zone results in the removal of specific barriers to capital and product flow while simultaneously hindering the flow of people across boundaries. Therefore, place-based neoliberalism, in the form of the foreign-trade zone, is part of a larger process of partial denationalization for the purpose of encouraging throughput and capital flow.

The Nature of the Foreign-Trade Zone

Before discussing the history of public/private collusion to master space, it is important to discuss the theoretical underpinnings of the foreign-trade zone. Shortly after the Foreign-Trade Zone Act was signed into law, questions arose regarding the nature of the zone itself. Had states handed over control of territory to the federal government or were these zones all-together foreign? Regulations were quite specific on the type of boundary to be erected around each zone. Each foreign-trade zone would be required to construct a minimum 10-foot wire-netting fence with at least 6-gage wiring equipped with two strands of 12.5 gage barbed-wire (15 C.F.R. § 403, 1934). This new boundary had tighter security than the borders of the United States. Employees and vessels would be subject to inspection as they entered and exited each zone (15 C.F.R. § 805

& 807, 1934) (Figure 1). Customs laws would be applied to any article leaving the zones as if it were entering the United States for the first time (15 C.F.R. § 800, 1934).

Figure 1. Photograph of Foreign-Trade Zone No. 1



Note. Photograph was published in *The Huntsville Times* ("No Gate-Crashers Wanted Here," 1939).

The application of strict customs security led some newspapers at the time to conclude that foreign-trade zones were ports "in but not part of the United States" (Associated Press, 1940, p. 2). Others described the transportation of goods from a foreign-trade zone to other locations in the United States as "importing," implying that these zones were foreign territory (May, 1936). Newspapers were correct in their assertion that foreign-trade zones were foreign. Representative Emanuel Celler would later claim that "the foreign-trade zone for all intents and purposes is

foreign territory" (Celler, 1946). Ellsworth Buck would second this opinion by stating that "a foreign-trade zone is not a part of the United States" (*Foreign-Trade Zones*, 1948, p. 5). This foreign territory would be effectively controlled by an unelected bureaucracy and private firms unanswerable to the public. The barbed-wire fencing was just a reminder that this territory was different from the rest. Essentially, the U.S. government had partially denationalized just enough territory around individual firms, giving them control over the materials being manipulated within each zone.

While the barbed-wire fencing and heavy security of materials entering and exiting the zone made foreign-trade zones into a concrete geographic space, each zone existed abstractly in a limbo of transglobal shipping. Duties were not applied to goods entering or exiting each zone unless they entered the U.S. customs territory (19 U.S.C. § 81c, 1934). However, while goods were transported over U.S. territory, they were treated as though they simply appeared and disappeared from each zone after processing was complete. As described by *The Sunday Star*, once merchandise exits a foreign-trade zone, "duties are applied […] if the goods cross from the zone to go to other parts of the United States" (Futrelle, 1946, p. A26), as if the merchandise did not cross other parts U.S. territory before and after processing.

Merchandise and financial capital were not only moving from one concrete location to another, but abstractly transferring across an imagined space as if it only existed in foreign territory. Foreign-trade zones existed in absolute space as concrete realities, with built boundaries of barbed-wire fencing, but also existed in a state of abstraction as relationships between foreign and domestic territorial ownership, markets of exchange, and hubs of business and finance. Space like this, according to Lefebvre (1974/1991), exists in reality "by virtue of networks and pathways [and] may be cut off in a sense from social space by barriers and walls

[…] yet still remain fundamentally part of that space" (pp. 86-87). The foreign-trade zone, while separated by a physical boundary and represented by its space, existed outside of an imaginary political boundary for the expressed purposes of promoting trade and attracting capital. This dialectical relationship between concrete space bordered by barbed-wire fencing and abstract market relations resulted in a synthesis of the concrete and abstract.

The mandatory 6-gage fencing and 12.5-gage barbed-wire give the onlooker a visual separator of space. However, the space is integrated with the surrounding space both physically and abstractly by way of a functional network of trade. As argued by Lefebvre (1974/1991, p. 87), "visible boundaries […] give rise for their part to an appearance of separation between spaces where in fact what exists is an ambiguous continuity." The distinct fencing built on the boundaries of foreign-trade zones represent an abstract national and corporate boundary, separating the domestic space from international territory. The partial denationalization of territory by the state, represented here by the barbed-wire fencing, presents an interesting paradigm shift. As discussed by Lefebvre, Hegel, and Smith, the state itself has become the master of space (Hegel, 1837/2001; Lefebvre, 1974/1991; Smith, 1990). The foreign-trade zone appears to be something different all-together. The state still retains its mastery of the zone boundary, but relinquishes its control of concrete space to a private firm. Under this Hegelian paradigm, the private firm has fused with the state to become a single political/economic master of space.

As discussed in more detail throughout this chapter, this public and private collaboration had been in the works far in advance from the signing of the Foreign-Trade Zone Act in 1934. Largely unpopular to a protectionist congress and population, foreign-trade zones would go through a series of changes and several attempts would be made to pass a bill. Propaganda

campaigns in the news, a series of name-changes, and support from major financial interests had no impact on congress. It would be the culmination of this 40-year propaganda campaign, the highest tariff regime in U.S. history, and the Great Depression that would force congress to act. The interaction of two extremes would result in the Foreign-Trade Zone Act, of which financial interests had planned all along. The dialectical relationship between these two extremes, the protectionism of the tariff regime and the Great Depression, is represented by what Hegel called the relationship between the abstract, negative, and concrete (Hegel, 1817/2010). In his evaluation of Hegelian philosophy, Chalybäus (1854) referred to this dialectical relationship as thesis-antithesis-synthesis. The initial thought or action, the thesis, is followed by an opposing action, or the antithesis. The summation of the thesis and antithesis results in a synthesis of initial inputs, or a solution to the conflict between the thesis and antithesis. Under the Hegelian/Chalybäun paradigm of dialectical progression, the tariff regime alone had little impact on establishment of foreign-trade zones. For without the extreme nature of the Great Depression, foreign-trade zones would have been deemed unnecessary. It is this history of information management, public/private collaboration, and eventual economic depression that will be discussed in detail throughout the next few sections.

Pre-History of Foreign-Trade Zones

The Foreign-Trade Zone Act was passed and signed into law in 1934 but the idea was nothing new. Free zones and free ports were part of an ongoing attempt to loosen tariff restrictions on traded goods while also maintaining the current tariff structure (Thoman, 1952). However, others would argue that the foreign-trade zone was just a single step in a larger plan to eventually remove the tariff regime ("The Free-Port Scheme is a Free-Trade Scheme," 1918). It would be this form of place-based neoliberalism that would eventually lead to the removal of

tariffs on most internationally traded goods. Of course, free ports, free zones, and foreign-trade zones would be debated for decades before the final bill would be passed. Several political tools would be used to ensure the passage of the bill and many issues that opponents warned about would come true.

Free Port at Fort Pond Bay

Several unsuccessful attempts at creating free ports or duty-free zones were made prior to passing the Foreign-Trade Zone Act of 1934. The first attempt occurred in 1894 when a bill was introduced in the House of Representatives that would designate a portion of Fort Pond Bay, New York as a free port. House Resolution 7009 (1894) was presented to the 53rd Congress and gave broad discretion over the port to Charles Pratt, Austin Corbin, Watson Dickerman, and George Edgell. While the bill outlined basic requirements, such as the supervision of the Treasury Secretary over construction of the port and a border wall, the four proprietors would have ultimate control over management and ownership of the property (*S. Doc. No. 101*, 1895). If signed into law, the senate bill would have absolved Mr. Corbin and his associates from customs and tariff fees while the responsibility of paying charges for merchandise piers, warehouses, and dockage would lay at the feet of the Secretary of Treasury (S. 1980, 53rd Cong., 3rd Sess., 1894). In this initial attempt at creating free ports, a small group of individuals in one specific location would have benefitted from inverted tariffs.

Prior to House Resolution 7009 and Senate bill 1980, *The Helena Independent* interviewed Austin Corbin and reported that he had purchased 32,000 acres of land surrounding Montauk and Fort Pond Bay in 1889 ("Ocean Express Steamer," 1892). At that time, he controlled all the railroads on Long Island and began making moves to consolidate his control over trade in New York City. Mr. Corbin had "enough land at Montauk Point to build a city, all

the roads on Long Island, the probable privilege to buy half of his ships in the cheap foreign market, the American registry and subsidy for all his vessels, and the privilege to build a tunnel from the Pennsylvania depot in Jersey City to his Long Island railroad depot" ("Express Steamers," 1892, p. 3). He would use his wealth to pressure the Army Corps of Engineers to investigate the feasibility of a deep-water port in Fort Pond Bay (Elkins & Gillespie, 1892).

Coercion from Mr. Corbin made little difference and the report concluded that Fort Pond Bay was not a viable location for a transatlantic deep-water port (Elkins & Gillespie, 1892). Prior to the report publication, Mr. Corbin had consolidated control over several major rail lines in New York and extended rail services to Montauk (Landman, 1952). To complete his plans of controlling trade on Long Island, Mr. Corbin petitioned state and local governments for the construction of a harbor and sole ownership of Fort Pond Bay. Since the Army Corps of Engineers failed to approve construction, Mr. Corbin approached Senator William E. Chandler for the creation of free port on this property. Senate bill 1980 (1894) had some influential supporters in the upper levels of government and private business. Charles S. Hamlin, Acting Secretary of Treasury, A. K. Tingle, Treasury Department Special Agent, and Edward Rosewater, Editor of *The Omaha Daily Bee*, wrote letters directly to Congress supporting the bill (*S. Doc. No. 101*, 1895; *S. Doc. No. 170*, 1894). Each letter described the success of free ports in Germany and Belgium, and urged Congress to establish a free port in Fort Pond Bay.

It was clear that Mr. Corbin was using his wealth and powerful allies like Charles Pratt and J. S. Morgan, father of J. P. Morgan, to influence the Treasury Department (Carosso, 1987). Mr. Corbin was a close associate with Messrs. Pratt, Morgan and Rosewater, all of whom worked closely together to manage the message about free ports. Rosewater's *Daily Bee* published several articles about the topic, promoting it for use in the U.S. ("Free Harbors for

America," 1894). Mr. Corbin's influence did not stop at the U.S. Government. In 1894, he arranged a meeting between Count de Reventlow, the Danish Foreign Minister, and Wickham Hoffman, the U.S. Foreign Minister to Denmark, to discuss the success of the free port in Copenhagen ("Free Port of Entry," 1894).

Unfortunately for free port supporters, Austin Corbin was not a popular character, which would impact his chances of getting a free port in Fort Pond Bay. The *Freeland Tribune* called Mr. Corbin a "modern scoundrel" and claimed him to be "irredeemably vile, depraved and capable of perpetrating deliberate crimes, richly meriting the title of villain" ("Corbin in His True Colors," 1889, p. 4). Eugene Debs was more critical in his description of Austin Corbin. In an article written in the *Locomotive Firemen's Magazine*, Mr. Debs claimed that "Corbin has at least 35,000 men in his employ who have yielded to his enslaving program. They have renounced their rights as men and as citizens; they and their wives and children are Corbin's slaves" (Debs, 1889, p. 964). Other newspapers mirrored these sentiments, further hindering Mr. Corbin's success ("A Few Thoughts About Railroad Earnings," 1889). Corbin's unpopularity would be one of several reasons why the free port legislation would eventually fail.

Public sentiment began to trickle into Congress, as several Senators were opposed to the bill because it favored Mr. Corbin over other proprietors (Landman, 1952). Others argued that the bill conflicted with Article 1, Section 9 of the Constitution (Lomax, 1947)., which states "No Preference shall be given […] to the Ports of one State over those of another" (U.S. Const. Art. I, § 9). The bill would fail to pass in a lame duck Congress. However, Senator William P. Frye would introduce another free port bill in 1895 that would allow the Secretary of Treasury the authority to establish free ports in other locations upon application (S. 561, 54th Cong., 1st Sess.,

1895). The new bill, along with a similar bill in the House, would give ultimate authority over free ports to the Secretary of Treasury, a close friend of Mr. Corbin at the time.

Mr. Corbin placed pressure on powerful individuals in both houses of Congress to pass the newly amended bills and in a lengthy letter to both Houses of Congress, Mr. Corbin provided a detailed history of the previous bills and described the success of similar free ports in Europe (*S. Doc. No. 106*, 1896). He concluded the letter by claiming that a free port in Fort Pond Bay, under his control, would reduce transshipment costs because of Fort Pond Bay's strategic location, improve safety for ships avoiding rough seawaters along the shores of Long Island, and promote growth in manufacturing employment in Montauk, New York. According to Landman (1952), the death of Mr. Corbin on June 4 of 1896 and the attention placed on the Presidential election of that same year would overshadow plans for a free port in Fort Pond Bay and both bills would fail to reach the floor for a vote.

Free Ports Become a National Issue

The failure of the free port in Fort Pond Bay would not be the last unsuccessful attempt at creating free ports in the U.S. In August of 1912 the Merchants' and Manufacturers' Exchange of New York persuaded Congress to extend inverted tariff benefits during their reoccurring exhibits in New York City (Pub. L. No. 62-289, 37 Stat. 327, 1912). This statute allowed only the Merchants' and Manufacturers' Exchange of New York to import art, scientific material, and industrial materials for the purpose of display at the periodic exhibits. Congress would pass a similar statute on September of 1913 extending free port benefits to the Panama-Pacific International Exposition to be held in San Francisco two years later (Pub. L. No. 63-14, 36 Stat. 112, 1913). By October of 1913, Congress would act to remove trade barriers for a minority of warehousing firms by adding a single paragraph to a large income tax bill. Shortly after the

Income Tax was amended, the Underwood-Simmons Act of 1913 was enacted to reduce tariffs and provide an exhaustive list of duties on individual products (Pub. L. No. 16, 38 Stat. 197, 1913). However, the Underwood-Simmons Act required direct supervision by the Secretary of Treasury, William G. McAdoo. Interestingly, Mr. McAdoo was a wealthy railroad magnate and former President of the Hudson and Manhattan Railroad ("McAdoo's Plain Words," 1911).

During his tenure as President of Hudson and Manhattan Railroad, Mr. McAdoo built a close working relationship with J. P. Morgan and other prominent financiers. In fact, Mr. Morgan would finance much of Mr. McAdoo's construction of the Manhattan subway line in New York City ("M'Adoo May Have Backing of Morgan," 1910). As Treasury Secretary, Mr. McAdoo would return the favor in 1914 by providing $100 million in currency to New York banks, including J. P. Morgan & Co ("M'Adoo Meets Bankers Here," 1914). Three years later, Mr. McAdoo approved the issuance of $2 billion in "Liberty Loans" to a litany of financial firms and private corporations, including $22.5 million to Jacob Schiff's Kuhn, Loeb & Co. and $1 million to John D. Rockefeller's Standard Oil ("Standard Oil Takes Million of the Loan," 1917). Throughout this time period, Secretary McAdoo was an ardent supporter of free ports, placing pressure on the Senate Finance Committee to approve a bill ("Importers," 1917). The connection between the railroad industry, finance, and the free port movement was not unusual at the time and would continue for the following 21 years.

Over the next 5 years, consortiums of private businesses such as the Merchants' Association of New York and Civic League of Staten Island placed pressure on Congress to establish a free port in New York (Chamberlain, 1915; "'Free Port' Investigation is Strongly Advocated," 1916; Rush, 1920). These organizations used their power and influence to urge President Woodrow Wilson and E. E. Pratt, Chief of the Bureau of Foreign and Domestic

Commerce, to place pressure on Congress to act (Pratt, 1915; "President Wilson is Urged to Favor Free Ports," 1914). The Department of Commerce also urged the President to take executive action to establish a free port in Honolulu, Hawaii (Pratt, 1916). Supreme Court Justice of Hawaii, Sidney Ballou, spoke out in opposition and argued the proposal was unconstitutional ("Plan to Establish 'Free Port' in Honolulu Taken up by Redfield," 1916). His complaints had little effect, as major business interests in the territory's Chamber of Commerce used their influence to promote the idea in local newspapers ("Kahului the Real Site for Free Port," 1916).

Major corporations, individuals in the President's Administration, and free trade associations were mounting pressure against Congress to pass a bill creating free ports throughout the country ("Free Ports Mean Dumping Ports," 1919). Following a report submitted to Congress by the Secretary of Treasury, Secretary of Commerce, and Secretary of War, another bill was submitted to Congress (H.R. 209, 64th Cong., 1st Sess., 1916). During debates in Congress, Representative G. Murray Hulbert discussed his conversation with prominent German financiers Eugen Guttmann and John Schröder, claiming free ports had been a boon to the financial sector in major German port cities (53 Cong. Rec. 13718, 1916). In opposition, Representative James R. Mann claimed statements by Mr. Hulbert had been prepared for him by special financial interests who would stand to benefit from free ports (53 Cong. Rec. 13725, 1916). The bill failed to leave committee and died in the House.

Between 1917 and 1918, the Chamber of Commerce of San Francisco, Merchant's Association of New York, New York Chamber of Commerce, Philadelphia Board of Trade, Philadelphia Bourse, and Commission Council of New Orleans placed pressure on Congress to act. A series of committee hearings were held across major cities and reports were submitted to

Congress in support of free ports (Albrecht, 1918; Caesar, et al., 1918; "City Urges Plea for Free Port," 1918; Newhall, 1918; *Report of Committee of Philadelphia Board of Trade*, 1918; Taussig, et al., 1918). Unlike previous attempts at promoting free port legislation this was better organized. Talking points were standardized across each committee hearing and report, clearly showing collaboration between major financial interests.

Financial interests and associated public officials were working alongside news organizations to obfuscate the truth from the American people. An editorial in *The Tacoma Times* called for the Mayor of Tacoma to "work quietly, quickly and efficiently" to ensure the city becomes a free port (Lawler, 1918). One of the best ways to change public opinion about a divisive topic is to change the narrative. Free ports now became part of an unofficial propaganda campaign to promote peace after the World War I. Newspapers around the country were linking the creation of free ports to peace talks between Russia and Germany ("All Slavs Given Orders to Arm," 1918; "Moscow is Capital of Russia, Decree," 1918). Pope Benedict XV was even involved, when he provided peace terms with Germany in exchange for a free port in Trieste ("To Renew Peace Effort," 1917). The crescendo occurred when President Woodrow Wilson offered his Fourteen Points. Several of his points called for the removal of trade barriers and the establishment of free ports throughout Europe ("Peace Treaty is Founded on the Fourteen Points," 1919; Wilson, 1918). By changing the narrative, free ports were no longer being debated on their actual merit. The change came just in time, as the *Evening Public Ledger* published a report finding that the Hamburg free port had led to a comparative decline in manufacturing compared to the rest of the country (Douglass, 1918). The competitive advantage given to free port firms resulted in the closing of other firms, a topic not yet discussed in Congress.

While questions regarding the actual benefits of free ports remained unanswered and public support for legislation was unclear, prominent businessmen began making moves to profit from potential free port legislation. In spring of 1918, Alfred I. du Pont, prominent industrialist/financier of the du Pont family, purchased Merchant's and Manufacturers' Exchange of New York ("Central Palace for World's Mart," 1918), which was still under special duty-free designation (Pub. L. No. 62-289, 37 Stat. 327, 1912). Mr. du Pont was reportedly in negotiations with foreign businesses to stimulate trade with Latin America and Allied Governments in Europe ("Central Palace for World's Mart," 1918). Other prominent individuals were involved in the transaction, such as William P. Bonbright, President of William P. Bonbright & Company bank of New York and close associate of Rockefeller Foundation (Greene, 1915). Messrs. du Pont and Bonbright were situating themselves to benefit from free port policy. They worked closely with members of Congress on a series of new bills (H.R. 10892, 65th Cong., 2nd Sess., 1918; S. 4152, 65th Cong., 2nd Sess., 1918), but both bills died in committee. Proponents would need a new strategy to win support.

Different Name, Similar Game

The topic of free ports would be discussed by Senator Wesley L. Jones numerous times after Senate bill 4152 (1918) failed to leave committee. However, it was unclear to many Congressional members who would ultimately benefit from these zones. Throughout the decades leading up to 1919, the terms free port and free zone had become associated with free trade, as they were related. Proponents of free ports made a concerted effort to disguise the nature of free ports by changing its name. In an editorial in the *Sunday Star* titled "U.S. Seeks Big Share of World Commerce," reporter G. Gould Lincoln stated that powerful corporate interests "have advocated for the establishment of […] free zones, or foreign trade zones, as they prefer to call

them" (Lincoln, 1919, p. 3). Some supporters of free ports offered alternative names, but it would be the newly minted title foreign trade zone that would prevail.

On October 6, 1919, Senator Jones introduced Senate bill 3170 (1919) to the floor for discussion. A similar bill was introduced in the House of Representatives by California Representative John I. Nolan (H.R. 10156, 66th Cong., 1st Sess., 1919). Both bills would introduce the term foreign trade zone to Congress (58 Cong. Rec. 9095, 1919). This would be the first time Congressional members and business interests would use the new term. An article from the *American Economists* would claim that the "the use of [foreign trade zone] is mere camouflage, as it was devised by the proponents of the Free-Trade Zone or Free-Trade Port system to draw away attention from the unquestionable fact that the system is a dangerous application of a policy of Free-Trade" ("Free-Trade Ports and Income Taxes," 1923, p. 32).

Years later, New York City Council President Newbold Morris made an illuminating statement in a speech at the National Foreign Trade Convention that free ports have been misunderstood because congressmen had too often "confused the word 'free' with free trade" and proponents of free ports "call it the Foreign Trade Zone to take that curse off the word 'free port'" (Morris, 1939). This was a public admission of the use of doublespeak to obfuscate the meaning of foreign trade zones. Not uncommon by public officials, doublespeak provides those in power "the ability to use lies and choose and shape facts selectively" (Herman, 1992, p. 3). Under this paradigm, the name changed but the general idea remained the same. The new foreign trade zone bill used similar language and provided the same benefits as free ports (H.R. 10156, 66th Cong., 1st Sess., 1919)

On October 10, 1919, hearings were held in both houses of Congress to discuss public sentiment toward the new legislation. Senator Jones presided over the hearings along with

Senators Irvine Lenroot, Morris Sheppard, Duncan U. Fletcher, and William M. Calder. Several corporate, industrial, and banking titans from across the country, such as Samuel Ulmann of Jos. Ulmann Inc., John W. Thomas of the Great Lakes Trust Co., and William F. Collins of the American Bankers' Association were in attendance (*Free Zones in Ports*, 1919). Meeting minutes tell the story of close cooperation between financial interests and Senator Jones to provide direct benefits to some of the country's wealthiest industrialists at the time.

Opposition in Congress claimed that these financial interests were holding sway over the entire process. Senator Boies Penrose argued that the bill had been purposely sent to the wrong committee so that Senator Jones could personally oversee its development. Senator Penrose stated that any foreign trade zone legislation is a "purely financial and fiscal matter which is always within the jurisdiction of the Ways and Means Committee of the House of Representatives and of the Finance Committee of the Senate" but the current bill was brought to the floor from the Senate Committee on Commerce (58 Cong. Rec. 6704, 1919). It was highly irregular that a Senator from the Committee on Commerce would present a bill then send the bill to his own committee for hearings. Under these conditions, Senator Jones could use his authority in the Committee on Commerce to choose the participants in the hearings and exert influence on the evolution of the bill (58 Cong. Rec. 6704, 1919). Senator Penrose also claimed that private corporate interests could easily manipulate the bill in their favor through lobbying efforts in the Commerce Committee (58 Cong. Rec. 6784, 1919).

Senate bill 3170 (1919) would go back to the Committee on Commerce and three prominent members of the committee—Senators Wesley Jones, William Calder, and Irvine Lenroot—called for a meeting with other members of the Commerce Committee to promote its passage ("To Press Bill for Free Zones to Aid Shipping," 1920). Around the same time period,

the National Chamber of Commerce held their annual meeting in Atlantic City, New Jersey and invited members of local Chambers of Commerce around the country ("To Discuss Vital Subjects at U.S. Chamber Meeting," 1920). According to an article in *The Evening Star*, the Chamber of Commerce concluded that foreign trade zones "should be established by congressional enactment" ("National C. of C. Favors D.C. Vote," 1920, p. 3). Financial interests were planning an all-out publicity campaign for its approval.

In April of 1920, the United States Chamber of Commerce submitted a resolution to Congress petitioning for the creation of foreign trade zones (*Eighth Annual Meeting*, 1920). By December of 1920, Senators Jones, Calder, and Lenroot were building another case for the creation of these zones ("To Press Bill for Free Zones to Aid Shipping," 1920). By April of 1921, these Senators attempted to conceal a new foreign trade zone bill in an omnibus shipping bill (S. 597, 67th Cong., 1st Sess., 1921). According to Krutz (2001), omnibus legislation is a common partisan tactic to camouflage often unpopular legislation within a larger spending bill. It was clear that the omnibus bill was being used to conceal the foreign trade zone legislation. However, opposition claimed that these zones would lead to spatial inequality between coastal port cities and interior towns across the U.S. ("House is Expected to Pass Scott Bill," 1921). Without Congressional support and possible legal justification, Senator Jones would reevaluate his approach to the bill.

The strategy had changed, Jones would tackle the issue of foreign trade zones from multiple angles. On August 11, 1921, he introduced Senate bill 2391 (1921), "A bill to provide for the establishment, operation, and maintenance of foreign-trade zones in ports of entry of the United States." This would be the first bill to introduce the newly hyphenated term. Four days later, Jones introduced an amendment to the tariff bill recently passed in the House (H.R. 7456,

67th Cong., 1st Sess., 1921) that would make the creation of foreign-trade zones legally feasible at a later date (61 Cong. Rec. 4985, 1921). Section 314 of House Resolution 7456 (1921) would set the stage for the creation of foreign-trade zones, as it gave the Secretary of Treasury the authority to remove duties on certain customs warehouses.

House Resolution 7456 (1921) would eventually be signed into law on September 21, 1922 and titled the Fordney–McCumber Tariff (19 U.S.C. §§ 123-575, 1922). However, prior to its passing, Senator Jones proposed an amendment to House Resolution 7456 on August 16 for the creation of foreign-trade zones (62 Cong. Rec. 11408, 1922). That same month, the *American Industries* journal published an article advocating for foreign trade zones. Interestingly, comments from the author were revealing on potential impacts of free zones. According to Ritter (1922), "there would be grave difficulty in establishing free ports except upon the seacoast and at points upon the international boundary line" (p. 19), therefore certain geographic regions would receive economic benefits over other regions. Unfortunately for supporters of the amendment, foreign-trade zones would not be included in the final Fordney–McCumber Tariff.

While many Democrat Senators and Representatives agreed about the effects of the new tariff bill, Republican members of Congress argued that the tariff was part of a larger goal in protecting U.S. jobs (62 Cong. Rec. 12064, 1922). After several weeks of debate, the House Resolution 7456 (1921) would become law, passing along party lines. The newly codified Fordney–McCumber Tariff (19 U.S.C. §§ 123-575, 1922) completely overhauled the Customs Administration and gave the Secretary of Treasury broad authority over customs, duties, tariffs, and bonded warehouses. In addition, Section 562 stated that "merchandise may be cleaned, sorted, repacked, or otherwise changed in conditioned, but not manufactured" and exported "without the payment of duties." While this newly drafted law took steps toward the creation of

foreign-trade zones, considerable red tape was involved in the process, preventing firms from benefitting from the legislation (Lomax, 1947).

After Congress passed the Fordney–McCumber Tariff, Secretary of Commerce and future President, Herbert Hoover, called on Congress to replace the system of bonded warehousing created by the act with foreign-trade zones. According to Haskin (1922), Hoover's call for foreign-trade zones was one in a number of suggestions for trade liberalization. With a Republican controlled Congress and the passing of a new tariff bill, proponents of foreign-trade zones regrouped to reframe their arguments. In 1923, the Hampton Roads Port Commission appealed to Virginia Governor Elbert L. Trinkle and Congress to designate the port of Hampton Roads a free port zone (Maher, et al., 1923). That same year, a report from the Board of Commissioners of the Port of New Orleans called for Congress to establish a free port in New Orleans (Hecht, et al, 1923). However, it became apparent that Congress would not consider free ports and foreign-trade zones at this time.

On February 20, 1924, Senator Jones once again presented a bill in the Senate for the establishment of foreign trade zones. The same as previous bills, Senate bill 2570 (1924) called "for the establishment, operation, and maintenance of foreign trade zones in ports of entry of the United States, to expedite and encourage foreign commerce and for other purposes." This would be the seventh attempt by Jones to establish free ports, free zones, or foreign trade zones in the U.S. It should be noted that the hyphenated term did not appear in every bill and it was common during this period for supporters and dissenters to use the term with and without the hyphen.

On November 1 of 1924, Secretary of Commerce Hoover issued a report to Congress supporting the Senate bill, claiming foreign trade zones would be "an excellent substitute for the inadequate system of bonded warehouses and drawbacks" (Hoover, et al., 1924, p. 33). Senate

bill 2570 sat in the Commerce Committee until April 28, when Senator Jones issued a report to the Senate (*S. Rep. No. 477*, 1924). This report did not differ greatly from previous reports but discussed recent problems with bonded warehousing and drawbacks included in the recent tariff act. This report was not discussed in any detail in Congress and was sent back to committee for further deliberation.

Senate bill 2570 was passed over several times throughout 1924 and '25 (65 Cong. Rec. 9164, 1924; 65 Cong. Rec. 10671, 1924; 66 Cong. Rec. 981, 1924; 66 Cong. Rec. 2448, 1925; 66 Cong. Rec. 3794, 1925; 66 Cong. Rec. 4859, 1925) until it died in committee. Refusing to quit, Senator Jones presented Senate bill 66 (1926) and another report to the Committee on Commerce on March 22, 1926 (*S. Rep. No. 437*, 1926), a bill that would be passed over as well (67 Cong. Rec. 7732, 1926). On June 3 or 1926, Senator George W. Pepper presented a petition from the Philadelphia Board of Trade requesting the Senate to pass Senate bill 66 (67 Cong. Rec. 10562, 1926), but the bill would be passed over once again (67 Cong. Rec. 11973, 1926). The topic of foreign trade zones would once again fail to reach the floor of the Senate. Proponents would return to the drawing board to reframe the argument for foreign trade zones in the U.S.

After reorganizing and reframing debate, concurrent bills in the House and Senate would reach the floor and sent to committees for debate. Both Senate bill 742 (1927) and House Resolution 5472 (1927) included the exact wording of earlier bills. House Resolution 8557 (1928) would also be submitted to the House and sent to the Committee on Interstate and Foreign Commerce the following January. This would be the second time that Congressional Records presented the hyphenated term 'foreign-trade zones' (69 Cong. Rec. 2018, 1928), an attempt to deemphasize the word foreign. According to a statement from Congressman Welch, foreign-trade zones were preferred over free ports because "the former appellation is misleading and

tends to convey the impression that they might interfere with our present tariff system. Quite to the contrary, foreign-trade zones as provided for in this bill which I have introduced In Congress, have absolutely nothing to do with tariff regulations" (69 Cong. Rec. 2018, 1928). However, it would appear that Congressman Welch contradicted this statement when he subsequently stated that a foreign-trade zone is "an area within which goods may be landed, stored, mixed, blended, repacked, manufactured, and reshipped without payment of duties" (69 Cong. Rec. 2021, 1928). Conflicting statements like this were common among supporters of the newly labeled foreign-trade zones.

It would appear that the name-change was beginning to work. Fewer news articles were discussing the new bills in Congress. A few newspapers were covering foreign-trade zone bills between 1924 and 1926, but many of these articles only mentioned the bills as a line item on a list of congressional bills on the docket ("Flood of New Bills Burdens Congress," 1925; "Senate Will Push Civil Service Bill," 1924; "Today in Congress," 1926). However, the topic of 'free ports' continued across the news space, with special attention on foreign port cities. An article from *The Evening Star* followed other reports discussing the benefits of Copenhagen's free port on the local business (Witte, 1924). The *New Britain Herald* published an article stating that the Medici family of Italy was integral in establishing a free port in Livorno as a refuge for asylum seeking "Jews and Moors from Spain, Catholics from England, merchants from war-torn France, and Armenians from the Levant" ("Port of Livorno is Important One," 1926, p. 21). Articles such as these were conditioning readers to view free ports in a positive light.

Economic Depression and the Smoot-Hawley Tariff

While newspapers continued to lead public discourse on foreign trade zones, Congress returned to the issue on May 23 of 1928. House Resolution 5472 (1927) died in committee but

Senate bill 742 (1927) and House Resolution 8557 (1928) would be tabled as next in order. On May 26, a petition from the Brooklyn Chamber of Commerce supporting the bills was read allowed on the senate floor (69 Cong. Rec. 10198, 1928). The Brooklyn Chamber of Commerce also requested for the inclusion of manufacturing within foreign trade zones (69 Cong. Rec. 10202, 1928). Senate bill 742 (1927) was presented to the Senate floor four more times throughout 1929 but tabled as next in order on each occasion, eventually dying in committee (70 Cong. Rec. 1265, 1929; 70 Cong. Rec. 2158, 1929; 70 Cong. Rec. 2328, 1929; 70 Cong. Rec. 3209, 1929). By the end of 1929, the crash on the Wall Street Stock Exchange would force Congress to turn its attention toward an upcoming depression (71 Cong. Rec. 4887, 1929).

The pain of economic depression was already being felt in industries outside of the stock market prior to October of 1929. By 1928, the agricultural industry was in the midst of a collapse and Herbert Hoover was running for president on a campaign to revitalize agricultural production. In November of 1928, Presidential candidate Hoover addressed a crowd in St. Louis claiming the agricultural collapse to be "the most urgent economic problem in our Nation today" and pledged to institute protective tariffs on agricultural products (Collier, 1928, p. 6). On April 16 of 1929, Hoover delivered a written letter to Congress urging both houses to amend the Fordney–McCumber Tariff to include all imported agricultural goods (71 Cong. Rec. 42, 1929). On May 7, Representative Willis Hawley presented House Resolution 2667 (1929) to the House floor. This resolution would adjust tariffs across industries but give special attention to agriculture. The House would pass the resolution on May 9 and send it to the Senate (71 Cong. Rec. 1031, 1929). The Hawley bill would be debated in the senate and Senator Reed Smoot would present a series of amendments to the floor of the Senate on December 3 of 1929 (72

Cong. Rec. 28, 1929). The final bill, Senate Concurrent Resolution 31 (1930), passed on June 13 of 1930 by a margin of 44 to 42 (72 Cong. Rec. 10635-10636, 1929).

The Smoot-Hawley Tariff Act was signed into law by President Hoover on June 17 (19 U.S.C. §§ 1301-1683, 1930) leading some scholars to claim that the combination of the Fordney–McCumber Tariff and Smoot-Hawley Tariff Act "imposed the highest nominal tariff rates in United States history" (Hayford & Pasurka, 1992). Others have argued that the tariffs created by the Smoot-Hawley Tariff placed pressure on Congress to finally pass a foreign trade zone bill. However, a series of foreign trade zone bills were continuously introduced over the next few years with little success (Lomax, 1947). A new campaign started shortly after the stock market crash when, on December 10 of 1929, Senator Robert Wagner presented a statement to the Senate written by Senator Royal Copeland on the benefits of a foreign trade zone in the Jamaica Bay area of Long Island, New York (72 Cong. Rec. 383, 1929). This would set the stage for another attempt at establishing foreign trade zones in the U.S.

By January of 1930, the U.S. was entering a depression and Congress was working on several proposals designed to boost economic output. On January 18, Louisiana Representative James O'Connor presented House Resolution 2564 (1930), "a bill to provide for maintaining, promoting, and advertising the International Trade Exhibition." After presenting the bill, O'Connor claimed that the purpose of the exhibition was similar to the underlying purpose of foreign-trade zones (72 Cong. Rec. 1922, 1930). He read from a report issued by the Chamber of Commerce of the United States discussing the potential benefits of foreign-trade zones. This would be the third time that the hyphenated version of foreign-trade zones appeared in congressional records, yet O'Connor claimed that United States Tariff Commission report of 1919 and two commission hearing summaries in 1917 and 1918 recommended the establishment

of foreign-trade zones in the U.S. (72 Cong. Rec. 1924, 1930). However, the term 'foreign-trade zone' did not appear in either the report nor the hearing summaries (*Free Zones in Ports of the United States*, 1917; Page, et al., 1919; Taussig, et al., 1918). Representative O'Connor was removing the terms free zones and free ports from history.

At the time, an interesting thing began to happen in congressional records. Sometimes the hyphen would be placed between foreign and trade and other times it would not be included. For example, when discussing geographical issues associated with international trade, O'Connor stated, "we have a foreign-trade sentiment in the United States and an economic position in the world which impel us toward the extension of our foreign trade" (72 Cong. Rec. 1926, 1930). The hyphen would be used in cases where the word foreign need to be deemphasized. The term 'foreign-trade' was now being conditioned into congressional lexicon.

With the stage set for a new type of bill, Representative Emanuel Celler presented a resolution titled "a bill to create the world commerce corporation and to provide for the establishment, operation, and maintenance of foreign-trade zones in ports of entry of the United States" (H.R. 9635, 71st Cong., 2nd Sess., 1930). Hearings were held on January 22, 1931 to discuss the bill. Again, the words free port or free zone were avoided in Congressman Celler's testimony. Celler referred to foreign-trade zones as neutral zones and when asked why, he stated "only in the sense, I take it, that if you called it 'free port' or 'free zone' you might confuse it with 'free trade'" (*To Create a World Commerce Corporation*, 1931). However, this bill would allow corporations to avoid paying the recently enacted tariffs, a move toward free trade. While this bill would fail to reach the floor, Congressman Celler would continue to present similar bills to the House. In December of 1931, following the failure of the Celler bill, Senator Wesley Jones presented Senate bill 1676 (1931) to the Committee on Commerce and Congressman Richard

Welch presented House Resolution 4726 (1931) to the Committee on Ways and Means. Identical to previous bills, both would also fail to reach the floor for a vote. By February of 1932, Congressman Celler would submit another foreign-trade zone bill to the Committee on Ways and Means (H.R. 9206, 72nd Cong., 1st Sess., 1932).

Foreign-trade zones were as unpopular to the Republican Congress as free ports and free zones during the early years of the Smoot-Hawley Tariff. However, outside pressure would eventually turn congressional opinion in favor of the idea. During an era where tariffs where the highest since the founding of the United States, no tariff was placed on commodities such as oil and gasoline. The primary beneficiary was the Rockefeller family and according to congressional testimony from Congressman Harold McGugin, cabinet members such as Treasury Secretary Andrew Mellon were profiting from the sale of Rockefeller oil (75 Cong. Rec. 1543, 1932). John D. Rockefeller Jr. would use this excess profit to purchase thousands of acres of land in Wyoming and donate it to the Federal Government as part of the Grand Teton National Park (75 Cong. Rec. 4079, 1932).

Mr. Rockefeller's purchase and subsequent donation of land to the federal government was not as altruistic as some have contended. Representative Frank Murphy described Mr. Rockefeller as "one of our great philanthropic Americans", a view not held by protestors in Wyoming objecting to the federal landgrab (75 Cong. Rec. 4078, 1932). In truth, Mr. Rockefeller had made a deal with Horace Albright, Director of the National Park Service (NPS), to establish a holding company called Snake River Land & Cattle Co. and purchased the land for donation to the NPS. The Teton Transportation Co. and Teton Hotel Co. were subsequently created after the land was purchased and a deal was signed between the Rockefeller Foundation and the NPS giving the two new companies a monopoly on transportation and hospitality in the park (75

Cong. Rec. 4079, 1932). Mr. Rockefeller had used his connections in Congress and the Executive Branch to expunge cattle ranchers from the land surrounding Jackson Hole and seized control of the territory for personal gain. This sordid affair was indicative of the neoliberal system being created at the time.

With the donation of land to the Federal Government and profits shared with prominent individuals in the administration, Mr. Rockefeller would use his influence to pass 19 U.S.C. § 144a (1932). This law would remove all duties on products transported into the Rockefeller Center. If sold for domestic consumption, the application of duties would be at the discretion of the Secretary of Treasury, a close friend to the Rockefeller family. According to the *New York Herald Tribune*, the designation of the Rockefeller Center as a free port "added impetus to the move for free ports" ("McKenzie Aids Move to Set Up Free Port Here," 1932).

During the early 1930s, the economic downturn was reaching a crescendo and public sentiment toward protective tariffs was beginning to turn. Newspapers across the country were at the center of public discourse on the subject. In an article published by the *Nogales International*, T. D. Boyd, Jr, a prominent businessman in Arizona, discussed problems associated with reactionary tariffs ("Tariff Discussed by Nogales Man," 1932). According to Boyd, "Italy stops buying our fabricated steel because we raise the duty on Italian tomato paste and lemons" (p. 3). This was mirrored by statements made in *The Roanoke Rapids Herald* claiming "foreign countries have retaliated with a similar tariff plan which keeps our surplus goods from being sold in those countries" ("The Tariff," 1932, p. 6). Newspapers such as *The Sunday Star* used this opportunity to promote the idea of foreign-trade zones as a means to alleviate some of the problems associated with high tariffs (Nerval, 1932), but the topic was largely absent from most newspaper outlets.

While the topic was out of public perception, Congress was able to discuss the topic without scrutiny. It appears Congress had taken the advice of George Lawler and worked "quietly, quickly and efficiently" (Lawler, 1918, p. 1) to pass the foreign-trade zone bill. On February 15 and 16 of 1933, hearings took place concerning House Resolutions 4726 (1931) and 9206 (1932). During the hearing, Congressman Celler admitted that his resolution was "more or less identical with a bill offered by Senator [Wesley] Jones in the Senate" in the latter part of the 1920s (Foreign Trade Zones, 1933, p. 6). A WABC radio address from the Commissioner of the Port of New York Authority Howard S. Cullman was read aloud. According to Mr. Cullman, the inability of Congress to enact foreign-trade zone legislation was largely due to public misunderstanding of these zones and "a nation-wide campaign of education is necessary to show our citizens living away from the seaboard the advantages" of these zones (Foreign Trade Zones, 1933, p. 13). Instead of a "nation-wide campaign of education", or re-education, the news media was largely silent on the issue as Congress met behind closed doors to determine the fate of this legislation.

Both bills would die in committee but by March of 1933 Congressmen Welch and Celler would submit House Resolutions 153 (1933) and 3657 (1933) to the Committee on Ways and Means. On April 13, Senator Clarence Dill would introduce Senate bill 1319 (1933) to the Committee on Commerce. Proponents of these bills were using the recent Presidential election of Franklin D. Roosevelt and subsequent overhaul of Democratic seats in Congress (Electoral College, 2020) to finally pass foreign-trade zone legislation. All three bills would sit in committee for deliberation. By January of 1934, Senator Royal Copeland would introduce Senate bill 2001 (1934) to the Committee on Commerce. On April 25, another bill would be introduced by Congressman Celler to House Committee on Ways and Means (H.R. 9322, 73rd Cong., 2nd

Sess., 1934). Congress would be flooded with several versions of the same bill with similar language.

Discussions were also occurring concurrently on the topic of reciprocal trade agreements between countries and subsequent removal of tariff (78 Cong. Rec. 5558, 1934). Support was growing among Democratic congressmen for increased executive authority regarding international trade agreements. The Reciprocal Trade Agreements Act of 1934 was signed into law on June 12, 1934 and abdicated authority over tariffs from Congress to the President of the United States (19 U.S.C. § 1351, 1934). This act would be one in a long line of acts intended to liberalize trade. On June 18, President Roosevelt would sign into law House Resolution 9322 (1934) and it would officially become known as the Foreign-Trade Zone Act (1934). With the influence of organizations such as the United States Chamber of Commerce and the Rockefeller Foundation, trade was becoming more liberalized and foreign-trade zones had become a reality.

Some scholars have argued that the Smoot-Hawley Tariff was the impetus for the establishment of foreign-trade zones (Seyoum & Ramirez, 2012). This sentiment has been propagated by government (Bolle, 1999; Bolle, 2008) and news sources alike (DePillis, 2019). However, the Smoot-Hawley Tariff was implemented in 1930 and a series of foreign-trade zone bills continued to be voted down in congress. By linking the Foreign-Trade Zone Act to the Smoot-Hawley Tariff, it obfuscates the 40 years of attempts before the act was signed into law. Based on the information available, it is clear that this was a long-term plan by industrialists and supporters in congress that required a series of well-timed events in order to be enacted.

Industrialists, private business organizations, newspaper companies, and bureaucracies worked closely together to manage the debate over foreign-trade zones for 40 years but the majority of congress refused to move on the issue. While contemporary scholars and government

sources contend that the Smoot-Hawley Tariff was the reason for the establishment of foreign-trade zones, the tariff was only a cover for free trade plans long underway. Additionally, the tariff was used as a catalyst to provide the President power to control international trade agreements. Even supporters for the Reciprocal Trade Agreements Act and the Foreign-Trade Zone Act admitted this in congressional testimony. According to Congressman Celler, with the Reciprocal Trade and Foreign-Trade Zone bills, the President "need not consult the Tariff Commission under the pending measure, but may enter directly into negotiations with foreign nations to increase or decrease duties" (78 Cong. Rec. 5558, 1934).

In reality, the plan for neoliberal trade policies like foreign-trade zones and the reciprocal trade agreement had been planned for years, but necessary support was not yet available. The Smoot-Hawley Tariff alone would not have been enough to get these measured passed into law. A major effort was made to change the language used to describe free ports, manage public perception through the news media, link free ports to peace after World War I, and direct public attention away from the topic during the Great Depression. The catalyst was not the Smoot-Hawley Tariff, but the combination of the tariff and the Great Depression. Without mass poverty following the tariff, the reciprocal trade agreement (a major power grab by the President) and foreign-trade zones would likely not have received as much support.

The use of one extreme to evoke an opposite extreme is not uncommon in politics. The extreme protectionism of the Smoot-Hawley Tariff and the Great Depression resulted in the creation of foreign-trade zones and a more liberalized trade policy regime. The series of events leading up to 1934 reflects G. W. F. Hegel's dialectical approach to history. In his book *The Philosophy of History*, Hegel argues that events evolve through a series of steps referred to thusly as thesis-antithesis-synthesis. Initial events spur one or more reactions, or antitheses,

resulting in some solution, or synthesis (Hegel, 1837/2001). According to Lincoln (2017), the Hegelian Dialectic manifests itself in many forms between a ruler and the populace. When a ruler cannot achieve his/her goals due to an opposite reaction by the populace, both arrive at a synthesis. However, this synthesis may also be preordained by the ruler so that an optimum solution is established whereby the populace believes it arrived naturally. In the case of the Foreign-Trade Zone Act, a policy by which powerful individuals in government and private business had planned for 40 years, the combination of two extremes, the Smoot-Hawley Tariff and the Great Depression, gave supporters the impetus for the synthesis that had already been planned.

The Pre-History of Foreign-Trade Zones in Context

Events that led up to the creation of foreign-trade zones ultimately decided the short-term fate of the zones themselves. The turn of the century saw growing resentment of foreign producers and cheap European goods. Feelings towards foreign products grew more estranged following World War I. The eventual economic crash of 1929 would be the catalyst that would eventually change Congressional attitudes toward the free zone idea. Of course, it would take some reframing for the bill to pass in Congress. A series of reports from the Tariff Commission referred to the success of free ports in Copenhagen and Hamburg but provided no valid evidence (Marvin, 1926; Page, 1919; Taussig, et al., 1918). Public and Congressional opinions toward free zones were divided and proponents had a plan to mold these opinions in their favor, the name free port was toxic and needed to be changed. Newbold Morris provided valuable insight years later when he admitted that proponents changed the name to "Foreign Trade Zone to take that curse off the word 'free port'" (Morris, 1939). The name changed but the idea remained the same. The hyphen was later added and the emphasis on the word foreign was removed. While

this may not be the lynchpin that led to the passing of the act, it certainly was an important step in changing attitudes. After the name was changed, foreign-trade zones made few appearances in popular newspapers around the country. This gave the newly elected Congress of 1932 time to discuss the bill in private without public scrutiny.

While attitudes toward the free zone evolved in the years following the passage of the Foreign-Trade Zone Act, its dissenters were largely correct. According to the *American Economist*, free zones were "but another step in the direction of Free-Trade—an entering wedge" ("Free Ports," 1918, p. 333). This comment was accurate in describing the future of trade in the United States, as the Reciprocal Trade Agreements Act would be signed the same year, giving power to the President to remove tariffs and duties without Congressional oversight (19 U.S.C. § 1351, 1934). The Protective Tariff League warned of the unfair competitive advantage that firms in the zones would receive over other businesses (*Free Zones in Ports*, 1919). Later research would argue that this warning came true (Kanellis, 1995). Other opponents to free zones warned of a potential for spatial inequality between major port cities and other towns located in the economic periphery ("House is Expected to Pass Scott Bill," 1921). Recent research has revealed a significant link between spatial inequality and foreign-trade zones in the United States (Lane, 2020). While the Foreign-Trade Zone Act was signed into law, it would be decades before these zones would be utilized in port cities across the country and major corporations would eventually benefit from the system of inverted tariffs.

Evolution and Growth of Foreign-Trade Zones

The Foreign-Trade Zone Act in its final form was a culmination of decades of collaborative work by groups such as various Chambers of Commerce, major international shipping firms, financial institutions, and pro-business members of Congress. The newly printed

act differed in some was to previous attempts but the general idea remained the same. Each port in the United States would be allotted one foreign-trade zone per port within a certain distance outlined by the Foreign-Trade Zone Board. Goods were allowed to be shipped into, stored, and manipulated (but not manufactured) in each warehouse. Duties would be applied to the original good if it entered the domestic marketplace (19 U.S.C. § 81a-81u, 1934).

What made this act different from other contemporary tariff reduction legislation was its spatial form and the distinct use of the word foreign. The term foreign not only applied to the goods brought into each zone, but to the zone itself. Under this legislation, U.S. territory was partially denationalized and officially became foreign land outside of customs territory. Once a foreign material left the zone, it would be sent into customs territory for inspection. Ultimate control over the zone would be placed in the hands of the Board (Pub. L. No. 307, 590 Stat. 999, 1934); however, corporations within each zone were free to make decisions without Congressional oversight. This would be the first time in U.S. history that Congress partially denationalized territory to non-sovereign entities.

Early Years of the Foreign-Trade Zone

One of the major contentions preceding the establishment of foreign-trade zones was the issue of manufacturing. During a public hearing on April 11, 1934 in front of the Subcommittee of the Committee on Commerce concerning Senate bill 2001 (1934), speakers disagreed over the inclusion of manufacturing within these zones, leading the Chamber of Commerce of the United States to conclude that manufacturing should be excluded because transshipment is the primary function of foreign-trade zones (*Foreign Trade Zones*, 1934). The Act was passed without manufacturing but goods could be "stored, broken up, repacked, assembled, distributed, sorted,

graded, cleaned, mixed with foreign or domestic merchandise, or otherwise manipulated" prior to transshipment (Roper, Morgenthau, & Dern, 1934, p. 3).

It was clear that place-based policy such as foreign-trade zones were new territory. In his 1936 annual report to Congress, Secretary of Commerce Daniel C. Roper called the foreign-trade zone "experimental" and admitted that the growth of these zones had "proceeded slowly" (Roper, 1936, p. 33). The first and only zone between 1937 and 1947 was located on Staten Island in New York City (Sawyer, et al., 1948). Mobile, Alabama would establish a foreign-trade zone in the Port of Mobile in 1938, but it closed shortly after approval due to disagreements with the state legislature (Jones, et al., 1941). Early pressure from New York business owners such as Austin Corbin and organizations such as the New York Chamber of Commerce would eventually succeed, giving New York City a major head-start in profiting from the establishment of its foreign-trade zone. By 1939, Foreign-Trade Zone No. 1 would help to generate a 150 percent increase in the value of goods shipped into the zone in a single year (Associated Press, 1940). The news of New York's success would prompt New Orleans and San Francisco to follow suit. By 1948, there would be only three foreign-trade zones across a country (Sawyer, et al., 1949). If increased transshipments had a positive effect on a local economy, these three cities had an advantage over others urban centers across the country.

The spread of foreign-trade zones was extremely slow in the early years and it was becoming apparent that the current limitations on zone activity would hinder future foreign-trade zone activity. Powerful members of local chambers of commerce such as Bill Pawley, former ambassador to Brazil and Peru, used their influence in Washington to promote foreign-trade zones to Congressmen. In an article published in *The Miami Times*, Congressman George Smathers advocated for the approval of a foreign-trade zone in Miami (Smathers, 1949), a

common tactic for bolstering public support from local businesses. Even with support from business professionals and congressmen, foreign-trade zones were slow in growth and supporters blamed the prohibition of manufacturing as the main culprit. According to testimony from Emanuel Celler in front of the Ways and Means Committee, "the fact that you cannot manufacture hampers the operation of the zone" (p. 14) and if manufacturing were allowed, "you could have unlimited zones, widespread all over the country" (*Foreign-trade zones*, 1948, p. 16).

During the early days of the foreign-trade zone, a few coastal cities were benefiting from inverted tariffs and other possible benefits provided by these zones. By 1950, only six zones existed across the country and of these six (New York, New Orleans, San Francisco, Los Angeles, Seattle, and San Antonio), only one existed inland (Sawyer, et al., 1951). This presented a spatial conundrum for which Emanual Celler would be questioned several times. Detractors claimed that the nature of foreign-trade zones would lead to spatial inequalities between coastal and continental cities (*Foreign-trade zones*, 1948). By 1950, only New York City was profiting from its zone and San Antonio had yet to attract any revenue (Sawyer, et al., 1951). Representative Celler attempted to dissuade detractors on the spatial problems by claiming that inland importers benefited from reduced expenses by warehousing their goods in coastal foreign-trade zones but did not comment on intermodal costs associated with continental shipments and provided no information regarding tangible benefits to these firms (*Foreign-trade zones*, 1948).

Private organizations such as the Customs Brokers & Forwarders Association of America, National Council of American Importers, Commerce and Industry Association of New York, and United States Chamber of Commerce began pressuring Congress to open zones to manufacturing and merchandise display for sale (*Foreign-trade zones*, 1948). By 1949, major

shipping and port interests were in discussions with Emanual Celler to amend the Foreign-Trade Zone Act so that they could fully utilize these zones ("Trade Zones Seek Wider Activities," 1949). A year later, the American Warehousemen's Association adopted a resolution to support House Resolution 2163 (1949) which allowed for manufacturing and exhibition in foreign-trade zones (96 Cong. Rec. 1907, 1950). This resolution, along with others, would be replaced by House Resolution 5332 (1950), colloquially termed the Boggs Amendment after Congressman Hale Boggs. The bill was passed and signed into law on June 8, 1950 and explicitly state that goods "may be stored, sold, exhibited, […] or otherwise manipulated, or be manufactured" (Pub. L. No. 397, 48 Stat. 998, 1950). Private consortiums of business professionals were providing the language for congressional legislation, from which they would later benefit.

Even with the inclusion of manufacturing and exhibition, the number of active foreign-trade zones remained at six until 1954, when the only inland zone in San Antonio, Texas closed its doors (Weeks, Humphrey, & Stevens, 1955). The slow growth of zones across the country prompted the Foreign-Trade Zone Board to take matters into their own hands. In 1952, the Board authorized the establishment of special-purpose zones, colloquially called subzones, designated for areas not limited by distance from ports of entry and formally named standard foreign-trade zones as general-purpose zones (17 Fed. Reg. 5316, 1952). This would mark a major change in the direction of the foreign-trade zone by handing over Congressional authority to the Foreign-Trade Zone Board and allowing corporations to work directly with bureaucrats behind closed doors.

The Foreign-Trade Zone Board argued that authority was given to them by Congress with the passing of the Boggs Amendment (Weeks, et al., 1953). However, the Boggs Amendment gave no such authorization to the Board. While it did provide for extension of manufacturing and

exhibition of goods in foreign-trade zones (Pub. L. No. 397, 48 Stat. 998, 1950), no language was present in the bill indicating the Board had the power to directly approve of subzones not "in or adjacent to ports of entry under the jurisdiction of the United States" (19 U.S.C. § 81b, 1934). This new regulation (codified as 15 C.F.R. § 400.304, 1988) gave the Board the authority to establish a special-purpose subzone for use in manufacturing, exhibition, manipulation, or storing in areas separate from existing zones.

The first subzone application was approved in 1953 for temporary use in the San Francisco International World Trade Fair (Weeks, Humphrey, & Stevens, 1954, p. 4). Regulators were convinced that the Boggs Amendment and the establishment of subzones would result in a significant increase in zone usage across the country. However, the number of active general-purpose zones declined from six in 1953 to four by 1958 (Weeks, Humphrey, & Stevens, 1954; Weeks, et al., 1959). The first continuous subzone would not be established until 1963 when Union Carbide Caribe, Inc. applied for subzone status in Penuelas, Puerto Rico and Lilli Ann Corporation applied for subzone status in San Francisco, California (Hodges, et al., 1964). The number of foreign-trade zones would remain below ten until 1974 (Dent, Simon, & Callaway, 1975).

Opposition Concerning Foreign-Trade Zones and Development Patterns

While uptake was slow, opposition was growing against the rising number of corporations benefiting from subzones. In 1969 alone, five lawsuits were filed against the Board concerning subzones approved in Maine and New Orleans (Stans, Kennedy, & Resor, 1970). The subzone in New Orleans was a particular area of contention. Using a loophole in the U.S. tariff system, Equitable-Higgins was able to use foreign steel to manufacture ships and import the finished product to the U.S. market without paying tariffs or duties on steel. According to an

article published in *Marine Engineering/Log*, the shipbuilder could bypass tariffs on steel all-together because "barges and other vessels are not dutiable ("Shenanigans in New Orleans," 1968, p. 178). The article claimed that other shipbuilders would follow, resulting in the decline of U.S. produced steel. The Shipbuilders Council of America publicly denounced the move as detrimental to domestic steel production (Fowle, 1968).

Steel producers were especially outspoken against the new subzone in New Orleans. Shortly after the Foreign-Trade Zone Board approved the subzone application, Armco Steel Corporation filed a lawsuit against the Foreign-Trade Zone Board, claiming the Board's decision would cause irrevocable damage to Armco's business (Armco Steel Corporation v. Stans, 1969). Armco argued that Foreign-Trade Zone Act did not authorize the Board to provide a competitive advantage to foreign-borne materials over domestic materials. Armco also claimed that the subzone violated explicit statements from the Act to provide "uniform treatment under like conditions" (19 U.S.C. § 81n, 1934). The United States Second Circuit Court of Appeals in New York affirmed the establishment of the subzone on August 17, 1970 and the Equitable-Higgins retained their subzone in New Orleans (Armco Steel Corporation v. Stans, 1969).

On September 13, 1968, the Maine Port Authority applied for a foreign-trade zone in Portland and subzone in Machiasport to be used by Occidental Petroleum Corporation (Stans, Kennedy, & Resor, 1970). Opponents in Congress claimed that the subzone would allow Occidental "to import 300,000 barrels a day of foreign oil [while] other U.S. refineries […] will have to get by on imports of about 9 percent of their refinery throughput of crude oil" (114 Cong. Rec. 29512, 1968). After learning of the Occidental subzone application, Shaheen Natural Resources Co. filed a subzone application for the same location. In an interview with the Associated Press, an Interior Department spokesman stated that the Shaheen subzone application

would “make it more difficult for the secretary to approve Occidental” (Associated Press, 1968, p. 31). If the purpose of the Foreign-Trade Zone Act was to provide “uniform treatment under like conditions” (19 U.S.C. § 81n, 1934), why was there an issue with the approval of both subzones? Sinclair Oil Corp. noticed the potential conflict of interest and filed a lawsuit against the Secretary of Interior and the Board (Sinclair Oil Corporation v. Smith, 1968).

Opponents of the subzones in New Orleans and Maine were beginning to recognize the key problem with place-based neoliberal policies like foreign-trade zones: only certain locations and corporations would benefit from free markets while others would not. While scholars such as David Harvey and Neil Smith claim that neoliberalism is based on the ideals of limited state intervention and free markets, policies under this paradigm often manifest in terms public/private cooperation. State institutions use their monopoly of authority to provide market benefits to a chosen few, resulting in uncompetitive markets (Brenner & Theodore, 2005). This paradigm was becoming clear to some members of Congress. During Congressional testimony on October 3, 1968, Representative Bob Price of Texas summarized this dilemma when he claimed that the Occidental subzone at Machiasport would “build into the oil import program, an inequitous [sic] economic sanctuary for one company” (114 Cong. Rec. 29512, 1968). He would also claim that the Secretary of Interior Stewart Udal and Senator Edmund Muskie used their positions to establish the subzone in exchange for financial gain. According to Congressman Price, Senator Muskie convened with members of the New England Governors’ Conference and arranged for Occidental to “pay into a New England conservation fund 20 cents per barrel on each barrel of products it is permitted to bring into U.S. market” in exchange for the designation of Occidental’s refinery as a special-purpose zone (114 Cong. Rec. 29513, 1968).

Foreign-trade zones provided an avenue for government to work alongside private enterprise to pick winners and losers in the corporate economy. People familiar with the Occidental subzone began questioning its true purpose. According to an editorial published in *The Wall Street Journal* titled "Turnabout" (1968, p. 14), "it seems even more questionable to involve the Government in distributing quotas to a favored few – each of whom is guaranteed significant profits when he sells cheaper foreign oil at the high U.S. Price." As stated by Democratic Senator Russell B. Long in a speech to Congress in 1969, the proposal for a subzone at the Occidental refinery "is nothing more than an attempt by that company to extract fantastic oil concessions from the Federal Government" (115 Cong. Rec. 6163, 1969) and would result in a roughly $7 million payout to the New England Marine Resources Foundation, "whose board of directors would have six New England Governors, and allegedly some Senators" (115 Cong. Rec. 6164, 1969). Senator Long, afraid of the potential adverse effects this subzone would have on the rest of the United States, stated that "there would be a transfer of refining jobs from the South and Southwest to the Northeast", leading to further uneven development across the country (115 Cong. Rec. 6167, 1969).

The controversy concerning the Occidental subzone in Machiasport became a major source of contention throughout the latter part of the 1960s with lawsuits, newspaper editorials, and congressional debate. At one point, opponents to the project began proposing a repeal of the Foreign-Trade Zone Act. Conversations became so heated that Emanuel Celler submitted a letter to both Houses of Congress defending the legitimacy of the entrepot (115 Cong. Rec. 22439, 1969). In the end, plans for the subzone at Machiasport lapsed and the topic disappeared from discussion. Why did the Occidental special-purpose zone receive such vitriol? According to Peter Bradford, Maine Public Utilities Commissioner, the oil lobby worked with senators from

oil-rich states and funded an environmentalist movement against the subzone at Machiasport (Bradford, 1975). Funding from private business on both sides of the argument would place this zone in the spotlight while other zones continued to open across the country.

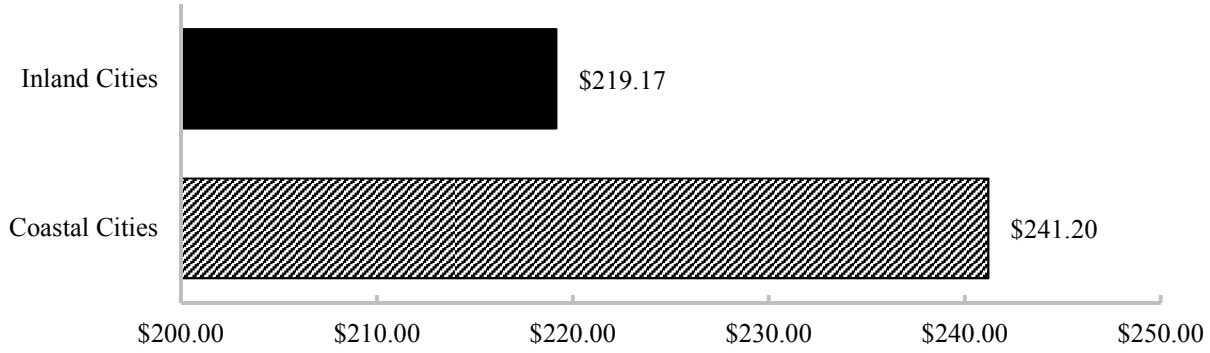
A contemporaneous operation was underway to establish as subzone for Enerco, Inc., a refinery in Ewa, Hawaii. The paperwork was filed on November 19, 1968 and the Board approved the subzone on April 20, 1970 (Stans, Kennedy, & Resor, 1971). Enerco was able to avoid scrutiny as attention was placed on Occidental. In many respects, opponents to the subzone in Maine were correct to worry about potential windfall profits for Occidental, as Enerco would import $75.3 million worth of untaxed oil and additives in 1974 alone. That same year, Enerco would sell $75.6 million work of refined petroleum to the U.S. domestic market (Dent, Simon, & Callaway, 1975). At the time, no other refinery received the same benefits.

Foreign-Trade Zone Usage Increases Dramatically

During the 1970s, growing interest among civil governments resulted in the fastest decadal growth in foreign-trade zones since they were established. In 1970, there were only seven general-purpose zones and three subzones (Stans, Kennedy, & Resor, 1971). By 1979, the number had increased to fifty-four approved zones, twenty-six active zones, and six subzones (Kreps, Miller, & Alexander, 1980). The turning point occurred during the fiscal year of 1977 when “a record number of proposals” were submitted to the Foreign-Trade Zone Board (Kreps, Blumenthal, & Alexander, 1978). While the number of general-purpose zones were on the rise, promoters of the foreign-trade zones had hoped the Boggs Amendment would have had a larger effect on zone development; however, it had little effect and by 1977 only about 4.4 percent of zone activity was strictly dedicated manufacturing (Kreps, Blumenthal, & Alexander, 1978).

Within two years, general-purpose zones had been established in several inland cities and subzones were created in San Francisco, Ewa (Hawaii), Harrisburg, (Pennsylvania), and Pittsburgh. Major corporations such as Lilli Ann Corporation (textile producer), Hawaiian Independent Refinery, Inc. (oil refinery), Enerco, Inc. (synthetic natural gas plant), Olivetti Corporation of America (typewriter assembly), and Volkswagen of America, Inc. (automobile manufacturing) were receiving approximately $630.5 million worth of untaxed foreign-born materials for production (Kreps, Miller, Alexander, 1980). While the number of inland zones had increased, major coastal cities were receiving $22 million more of untaxed foreign-born merchandise than inland cities (Figure 2) (Kreps, Miller, Alexander, 1980).

Figure 2. Foreign Merchandise Received by Foreign-Trade Zones in 1979



Note. Values given in millions U.S. dollars. Data referenced from Kreps, Miller, and Alexander (1980).

Contrary to contemporary opinion, the Boggs Amendment and creation of subzones had no noticeable impact on the growth in zone usage. It would be two major decisions by the Treasury Department and the Customs Service that would ultimately result in a significant rise in the number of zones. On February 4, 1980, the Treasury Department issued a regulatory decision that required the Customs Service to assess duties based on the original value of materials when

they entered the zone (T.D. 80-87, 1980). Prior to this decision, the Customs service had applied duties based on the value-added merchandise once it entered customs territory, resulting in the application of duties based on labor, facilities, and profit. This decision had little impact and disagreements between firms and the Customs Service continued until 1981. On August 21, 1981, the Customs Service clarified the earlier Treasury decision and excluded transportation costs from the list of dutiable services (C.S.D. 82-29, 1981).

While the Treasury and Customs Service decisions changed the way duties were applied to goods leaving foreign-trade zones, it may not have been the only reason for the increase in zone usage over the next few years. Prior to these changes, general-purpose zones had already increased at an arithmetic rate but the number of subzones would not increase substantially until 1985, when fifteen new zones were added in a single year (Baldrige, Baker, & Marsh, 1986). No significant change in general-purpose zone usage would happen after the new rulings and two years would pass before a significant increase in subzones would occur. It would be the introduction of two bills, a court case, and a major marketing campaign that would eventually lead to the substantial increase in foreign-trade zones throughout the 1980s.

On January 6, 1983, Texas Representative Jim Wright presented House Resolution 717 (1983) to the Committee on Ways and Means. On June 6, Texas Senators Lloyd Bentsen and John Tower presented Senate bill 1411 (1983) to the Committee on Finance, a similar bill to the one presented in the House of Representatives. If passed, both bills would amend the Foreign-Trade Zone Act (1934) to exempt property in foreign-trade zones from state ad-valorem taxes. These bills followed the December 12, 1982 court decision of Xerox Corp. v. County of Harris (1982), where the city of Houston and Harris County, Texas charged a nondiscriminatory ad valorem tax on copiers stored in on site in the foreign-trade zone. The U.S. Supreme Court ruled

in favor of Xerox and declared the ad valorem taxes remanded. Concerns were discussed in Congress but both bills would die in committee. However, the Supreme Court decision was heard loud and clear: twenty new general-purpose zones and twenty-four subzones would be authorized the following year (Baldrige, Regan, & Marsh, 1985).

Efforts by major business associations also had an impact on foreign-trade zone growth in the early 1980s. The National Association of Foreign-Trade Zones (NAFTZ) began an advertisement campaign to attract businesses to foreign-trade zones and promote the idea amongst the broader public. Articles in local newspapers began to appear with quotes from NAFTZ representatives regarding local foreign-trade zone applications. Marshall Miller, President of NAFTZ, became the unofficial spokesman of foreign-trade zone efforts. In separate articles concerning local foreign-trade zone efforts, Mr. Miller said businesses could expect significant profit growth due to major reductions in expenses (Adams, 1981; Carey, 1981). Trade journals solicited services directly to NAFTZ. A promotional article in *Nation's Business*, the author urged businesses and community members interested in establishing a zone to contact NAFTZ for more information on the topic (Turnbull, 1982).

One of the largest undertakings by corporate powerbrokers was the creation of a foreign-trade zone in Mount Olive township in New Jersey. The site was approved by the Foreign-Trade Zone Board in 1979 but construction did not begin until 1983. Funded completely by the Rockefeller Group Development Corporation, the 290-acre office park would provide assembly plants for a number of major corporate entities (DePalma, 1983). The following year, the Rockefeller Group published a series of advertisements in *The New York Times* advertising rental space in Rockefeller-owned property in the New Jersey foreign-trade zone. These ads specifically mentioned current tenants such as BMW, Halton Corporation, and Naarden

International to encourage other firms to follow suit (Rockefeller Group, 1984, 1985a, 1985b, 1985c, 1985d, 1986). By 1987, the Rockefeller Group spent approximately $50 million on infrastructure, construction, and advertisement (Courtney, 1987), an undertaking that small and mid-sized businesses would unlikely be able to afford.

Rockefeller Group's investment in the Mount Olive foreign-trade zone would eventually pay off. In 1989, the Rockefeller Group sold control of the company to Mitsubishi to the tune of $846 million. Richard A. Voell, President of the Group, told *The New York Times* that the money would be used to diversify Rockefeller holdings and to invest in more foreign-trade zone real estate (Cole, 1989). Later that year, the Rockefeller Group would use its newly acquired liquidity in a joint venture with BASF Corporation to expand its foreign-trade zone holdings in Mount Olive. Executives from BASF met privately with New Jersey Governor, Thomas H. Kean, and State Economic Development Division Director, Ben A. Ferrara, to discuss the expansion of its facilities into neighboring Allamuchy Mountain State Park. Proposals were quietly distributed to State House Commission on the day of an important agenda approval meeting instead of two weeks prior, as was customary. Lead real estate developer, Leslie Smith, admitted that "BASF required the swap to be kept secret, because it did not want to upset its employees" (DePalma, 1989, p. B2). The public would not be informed until after the deal was approved. Just another example of the state working quietly with a major corporation to provide public benefits to a select group of firms.

By 1999, the Rockefeller Group had teamed up with the City of Homestead, Florida to develop its inactive foreign-trade zone (Croghan, 1999). The Foreign-Trade Zone Board approved the Homestead general-purpose zone on August 17, 1990, placing it under the control of newly created nonprofit Vision Foreign-Trade Zone, Inc. (Mosbacher, Brady, & Stone, 1991).

By February of 2000, the Rockefeller Group signed an agreement with the Vision Council to cover the $4 per square foot expense for construction and renamed the site Rockefeller Group Foreign Trade Zone at Homestead (Adlerstein, 2000). Later that year, the Rockefeller Group purchased a third foreign-trade zone with approximately 309 acres of land in Cranbury Township, New Jersey. According to the *New Jersey Hills Media Group*, the Rockefeller Group was planning on purchasing more property for use as foreign-trade zones in Boston and Washington, D.C ("Rockefeller Extends List of Foreign Trade Zones," 2000).

The Rockefeller Group's reach across the foreign-trade zone landscape was growing and by 2001, they were in the process of developing property in a zone in northwestern Palm Beach County (Owers, 2001). The following year, the Rockefeller Group joined forces with TRiSTAR Business Communities in St. Louis to establish a zone in Granite City, Illinois containing warehousing space for Unilever, Flying J Inc., Dial Corp. and Procter & Gamble (M. Jackson, 2002). By 2003, the Rockefeller Group owned foreign-trade zone real estate in three major metropolitan areas across the country with plans to focus solely on low-risk duty-free zones for the foreseeable future (Holusha, 2003). That same year, the Rockefeller Group partnered with IDI Inc., Atlanta-based industrial property developer, to focus solely on real estate development in foreign-trade zones. In the process, the organization purchased TradeStar Advisory Services LLC, an international trade consulting firm, to corner the market on foreign-trade zone development. According to Rockefeller Group's Vice President of Development, Les Smith, the partnership was planning on projects in Southern California, New Jersey, and Chicago including the development of 3 million square feet of property (Muto, 2003).

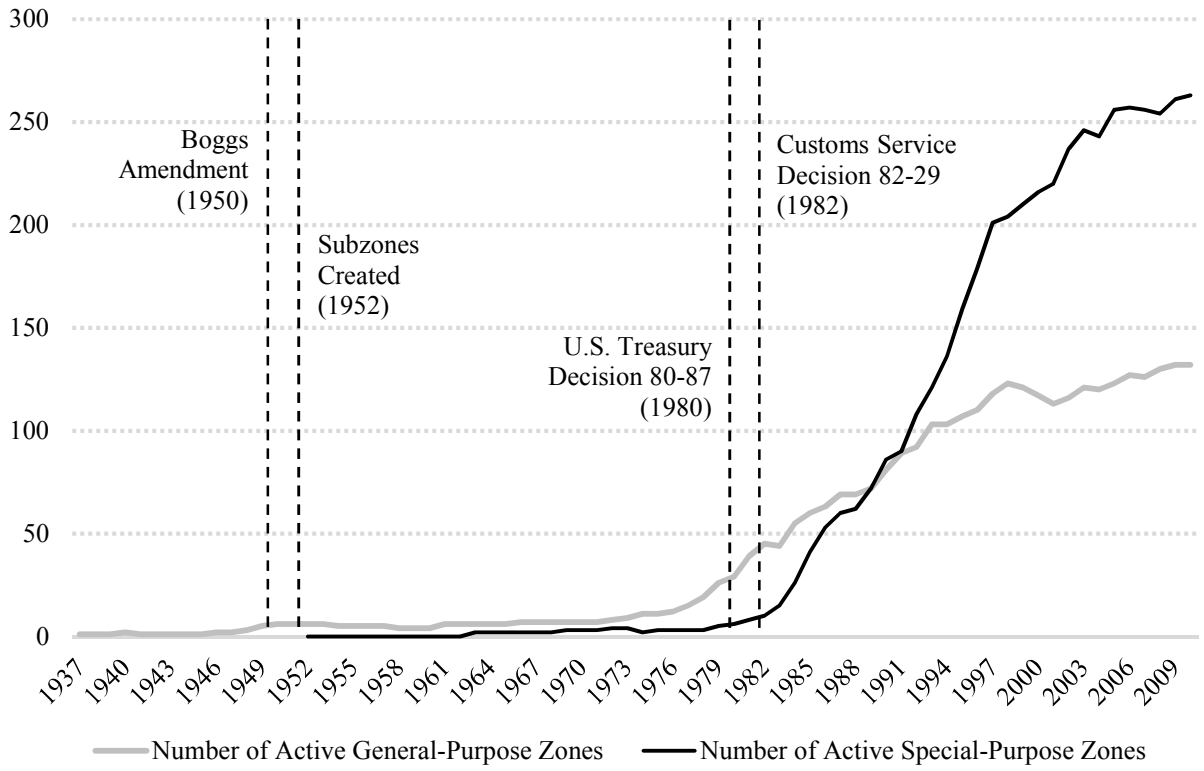
A year after partnership between the Rockefeller Group and IDI was formed, the team set their sights on second-tier markets like Sacramento, Dallas, Salt Lake City, Northern Kentucky,

Atlanta, Ft. Lauderdale, Memphis, Cincinnati, and Scranton (Ostrowski, 2004). Rockefeller owned foreign-trade zones would not be marketed or welcoming to small business. During the same time period, the Rockefeller Group had become close companions with the NAFTZ, having hired former Executive Director of NAFTZ, Brandi Hanback, as the Managing Director of the Rockefeller Group (Jordan, 2004). The following year, Rockefeller Group, IDI, and NAFTZ agreed to team up with the Lehigh Valley Economic Development Corp., a public/private partnership between city governments in Lehigh Valley Pennsylvania/New Jersey, to fund the establishment of a foreign-trade zone in the region (Bonner, 2005). By partnering with IDI and NAFTZ, the Rockefeller Group was able to corner the market on foreign-trade zone real estate. Today, they own foreign-trade zone real estate across California, Washington, Utah, Arizona, Illinois, Indiana, Georgia, South Carolina, Florida, New Jersey, and New York (*Rockefeller Group International, Inc.*, 2020).

Of course, the Rockefeller Group was not the only organization taking advantage of foreign-trade zones in the early 1980s. In 1986, Nestor Scherbey, International Customs Administrator for Amway Corp., consulted with Kent County Commissioners in Michigan regarding a proposal to establish two foreign-trade zone sites near Kent County International Airport and in Muskegon's Lake Michigan port. Ultimately, Mr. Scherbey argued, a foreign-trade zone would attract businesses such as Nissan and General Motors to Grand Rapids (Knorr, 1986). Other business executives were using the carrot approach to encourage cities to establishing zones. Arthur Hecht, Parts Operation Manager of FiatAllis North American Inc., wrote a letter to the Port of Sacramento urging the creation of a foreign-trade zone and offered to move a portion of the firms' operations to Sacramento (Heschmeyer, 1986). It would be decisions by the Treasury Department and Customs Service, the Xerox Corp. v. Harris County

decision, and a long list of promotional efforts by major corporations, and business non-profits that led to the largest increase in zones across the country (Figure 3).

Figure 3. Growth in General-Purpose and Special-Purpose Zones



*Note***.** No individual data were available for general purpose and special-purpose zones after 2010. Data referenced from each Foreign-Trade Zone Board Report to congress from 1937 to 2011 (see references).

The massive increase in zone usage corresponded with the growth of maquiladoras in Mexico along the southern U.S. border. Some congressional members claimed that these two place-based policies were having the opposite result as intended, as overall jobs in the industrial sector were declining and imports were surpassing exports (*Foreign Trade Zones*, 1989a). These concerned were brought to the attention of Congress by an International Trade Commission report published in 1990 evaluating the economic effects of foreign-trade zones. The

congressional report indicated that foreign-trade zones may lead a 3.2 percent decline in employment within the auto parts industry but a 1.6 percent increase in the auto assembly industry. Results also found that between 1984 and 1986, imports to foreign-trade zones had increased at a faster rate than exports, negating the zone's original intent (Liebeler, et al., 1988). It appeared that the foreign-trade zone project was performing wonderfully for a small number of large firms but the vast majority of people were not benefiting from the venture.

The Reduction of Congressional Oversight and Increasing Power of the Board

The growing rates of zone usage did not go unnoticed. On March 7, 1989, Congressional hearings were held to discuss issues regarding impacts of zones on primary sector production, job growth in manufacturing, and import/export ratio (*Foreign Trade Zones*, 1989a). Allan I. Mendelowitz, Director of Trade, Energy, and Finance Issues in the General Accounting Office, stated to Congress that the Foreign-Trade Zone Board was given excessive leeway in the approval process and often grants subzones liberally without applying "a public benefit test" (*Foreign Trade Zones*, 1989b, p. 28). Others concluded that the Board's liberal approval process had resulted in a net decline in American jobs (*Foreign Trade Zones*, 1989c). By giving priority to large corporations such as General Motors, Caterpillar, Ford, Xerox, and IBM, foreign-trade zones had given these firms a competitive advantage over potential startups and small businesses, many of which had little understanding of foreign-trade zones or the capital to invest in the application process.

To answer these growing concerns over the public benefits of zones, the Foreign-Trade Zone Board issued Order No. 530 amending the regulations by adding explicit language directing the approval process (56 Fed. Reg. 50790, 1991). A major change occurred in the language outlining Board requirements for determining "that zone activity is consistent with the

public interest" (56 Fed. Reg. 50793, 1991). However, the Board retained its authority to liberally authorize subzones, claiming the court's decision in Armco Steel Corporation v. Stans gave "broad discretionary authority to evaluate effect in terms of the public interest" (56 Fed. Reg. 50793, 1991). Language was added later stating the "Board will also *consider* […] whether the proposed activity is in the public interest" (emphasis added, 15 C.F.R. § 400.23, 1993).

Comments by the Board and the addition of these new regulations provided the rationale to continue approving subzone applications with little congressional oversight. The circular reasoning applied here indicated that because a court decision gave the Board authority to decide how and when a subzone is created, they did not need to change application requirements. Legislative action by Congress was needed but they failed to introduce any major legislation regarding foreign-trade zones for another two years. By June of 1993, subzone approval regulations had been largely forgotten by Congress until Florida Representative Peter Deutsch presented remarks to the House concerning recent trends in zone approval. He claimed the Foreign-Trade Zone Board was overstepping its authority and not enforcing regulations properly (139 Cong. Rec. 13416, 1993). His concerns fell on deaf ears. Between 1990 and 1994, the number of active subzones increased from 86 to 136 and would continue to grow over the next few years (Brown, Bentsen, & West, 1995). The number of subzones were outpacing general-purpose zones, allowing major corporations to benefit from inverted tariffs with relative impunity.

Throughout the latter half of the 1990s only three legislative changes impacted foreign-trade zones. One in particular, the Commercial Space Act of 1998, was designed to encourage the growth of a private space industry in the U.S. Under this legislation, a launch vehicle is not considered an export on launch or import on reentry unless it occurs in a foreign-trade zone (Pub.

L. No. 105-303, 112 Stat. 2843., 1998). Foreign-trade zones were now being considered in terms of three-dimensional space, as opposed to a two-dimensional plane. In addition, Congress passed a major trade bill that required the Foreign-Trade Zone Board to provide data no later than January 1, 2000 (Pub. L. No. 106-36, 113 Stat. 127., 1999). While these bills made some minor changes to Board activities, they had little impact on foreign-trade zones in general. The increasing ignorance of zone activity by Congress throughout the latter half of the 1990s was a reflection of the loss in Congressional oversight of bureaucratic activities. The foreign-trade zone program was being further decoupled from the democratic process and a shared from of public/private governance was developing.

A lack in Congressional oversight did not go unnoticed. After hearings were held in 1989 concerning the growing number of general-purpose zones and subzones, the Foreign-Trade Zone Board added a list of requirements for general-purpose zone approval but clearly stated their authority to liberally approve subzones with no Congressional oversight (56 Fed. Reg. 50790, 1991). These new requirements resulted in an 8.1 percent decline in general-purpose zones between 1998 and 2001. However, subzones increased by 7.8 percent during the same period (Evans & O'Neill, 2002). Companies such as DuPont were taking advantage of subzone benefits by threatening to move operations overseas and newspapers were happy to report this to the public (Gordon, 1999). Trade journals were also publicizing the benefits of subzones to potential users. As stated by Karen Sager in *Plants, Sites & Parks*, it was "clear that the program is a success in expediting and encouraging international commerce, resulting in jobs and investments within the United States that might have been lost to foreign competition" (Sager, 1999, p. 5). Of course, Ms. Sager was the President of NAFTZ at the time and it was her job to publicize the benefits of the zone.

Other firms across the U.S. took notice of benefits that certain favored corporations had received. It was clear that favored firms and geographic regions were receiving tax benefits beyond the scope of the Foreign-Trade Zone Act's original intent. The true scope of these benefits also depended on state enforcement of tax law. Language was being manipulated to provide these favored businesses with a competitive advantage over unfavored businesses. This reality came to light in 1999 when Sandy Bahr, Attorney with the Arizona Center for Law in the Public Interest appealed a court decision against the State of Arizona to the Arizona Court of Appeals (Bahr v. State of Arizona, 1999). At the time the suit was filed, the State of Arizona taxed commercial property at 25 percent but taxed property in foreign-trade zones at 5 percent. The state government filed foreign-trade zone property as class eight property, a designation specific only to foreign-trade zones (A.R.S. § 42-162(A)(8)(b), 1997).

The appeal was dismissed based on one clear distinction; the State of Arizona can greatly reduce the taxes on foreign-trade zone property because the firm within the zone "is no longer solely a private entity organized to make money. It now also functions as a vehicle or mechanism through which the United States Government has chosen to implement the policies that underpin the FTZ Act—those of increasing the general competitiveness of United States industries in international trade" (Bahr v. State of Arizona, 1999, p. 49). The government had used its authority to redefine the type of business occurring in foreign-trade zones without actually changing its function. However, a change in definition did not stop these firms from making profit. It gave the profit a higher purpose, to boost US competitive advantage and international trade. The Arizona government was using Orwellian doublespeak to give preference to one business over another.

Modern Era of Foreign-Trade Zones

Throughout the 2000s, few bills were introduced in Congress that had any major impact on the foreign-trade zone program. However, one bill in particular stood out. House Resolution 6415 (2008) was introduced as a means to extend trade agreement rules to firms inside a foreign-trade zone. Interestingly, the bill was not written by Congressional members but given to Representative Bill Pascrell by the NAFTZ (Bolle, 2008). Since its founding in 1973, NAFTZ's influence in Washington, D.C. had grown considerably. Leaders in the organization had close relations with Congressional members and used this influence to steer legislation in favor of foreign-trade zones. On September 12, 2005, Senator Daniel Inouye reminded the Senate of his close friendship with NAFTZ and its founder, Homer A. Maxey, Jr. According to Senator Inouye, "NAFTZ plays an important role in facilitating international trade and U.S. competitiveness through the promotion and support of the Foreign-Trade Zones Program" (151 Cong. Rec. S9927, 2005). Any bill presented in Congress promoting zone usage and relinquishing control to the Foreign-Trade Zone Board was written by NAFTZ prior to debate.

The NAFTZ also played a role in congressional research. After presenting House Resolution 6415 (2008) to Congress, a report was submitted to the Congressional Research Service (CRS) and used in their report to Congress. Language in the report was heavily influenced by NAFTZs, as the organization was referenced twenty-seven times throughout the report (Bolle, 2008). NAFTZ claimed that free trade agreements would negatively impact zone-based firms importing from countries not included in the agreements. To correct this problem, NAFTZ proposed that Congress extend free trade benefits to zone-based firms (Bolle, 2008). Another CRS report was commissioned two years later to discuss the bill. NAFTZ heavily influenced this report as well, with another twenty-seven references throughout (Bolle, 2010).

Unfortunately for NAFTZ, the bill would fail to reach the floor for debate and would die in committee.

By the end of the decade, it was clear that foreign-trade zone growth was waning and something had to be done. In December of 2008, Foreign-Trade Zone Board staff issued a proposal that would designate new site locations for specific industries, create a publicly available website to track site designations, and create a temporary transition phase for current grantees "to propose any number of pre-existing sites as magnet sites, with minimum five-year sunset periods" (Foreign-Trade Zone Board Staff, 2008, p. 7). In August of 2010, adjustments were made to the proposal removing the 2000-acre limit to site locations and reducing support letter requirements to firms (Foreign-Trade Zone Board Staff, 2010). These changes had a major impact on the way data were reported to Congress. After the Board's Online FTZ Information System (OFIS) went online in 2010, the Board no longer included data from individual subzones in the yearly report to Congress (Bryson & Geithner, 2012). Data from active general-purpose zones and subzones were combined into total active foreign-trade zone projects by state. Additionally, data were estimated for each zone project and exact values were no longer provided (Bryson & Geithner, 2012). Data could be obtained through the OFIS website but the convoluted system made it difficult to evaluate changes in general-purpose zones and subzones across time (International Trade Administration, 2020). The new OFIS website had effectively made foreign-trade zones less transparent to the public.

By 2016, a small but vocal portion of the population across the United States were beginning to oppose trade liberalization in general. According to the *Washington Post*, approximately 50 percent of the population stated they were indifferent to free trade; however, 33 percent of respondents were loudly against free trade policies, especially the Trans-Pacific

Partnership (Konitzer, Corbett-Davies, & Rothschild, 2016). Running in opposition to free trade, Donald J. Trump was elected President in 2016. He would fulfill his promise to pull the United States out of the Trans-Pacific Partnership on January 24, 2017 (82 Fed. Reg. 8497, 2017). The following March, President Trump signed a Presidential Proclamation placing a 25 percent ad valorem tariff on all steel articles imported in the United States, except those shipped from Canada and Mexico (Proc. No. 9705, 2018). That same day, he issued another proclamation placing a 10 percent ad valorem rate on all aluminum articles imported into the United States unless shipped from Canada or Mexico (Proc. No. 9704, 2018). On August 10, he increased dutiable rate for steel from Turkey to a 50 percent ad valorem rate (Proc. No. 9772, 2018).

The President was able to use language outlined in Section 232 of the Trade Expansion Act of 1962 to rationalize the unilateral enactment of tariffs on steel and aluminum products. The Act gave broad leniency to the President in terms of quotas and duties deemed to be in the interest of national security (19 U.S.C. § 1862, 1962). While the President publicly issued tariffs on steel and aluminum, Congress was quietly reducing tariffs on a range of items. On November 9 of 2017, Senator Orrin Hatch introduced Senate bill 2108 (2017), reducing or completely removing duties on 1,676 different items imported in the United States. The bill would be amended and reintroduced in the House on February 14, 2018 (H.R. 4318, 115th Cong., 1st Sess., 2018). The Miscellaneous Tariff Bill Act of 2018 would reduce or remove duties on a total of 1,663 items (Pub. L. No. 115-239, 132 Stat. 2451, 2018). Apparently, minced pimiento stuffed green olives did not pose a risk to national security.

News media published articles in strict opposition to protectionist measures, with one editorial arguing that these “tariffs will benefit a handful of companies, at least for a while, but they will harm many more” (The Editorial Board, 2018, p. A18). The editorial continued by

arguing that wealthy companies would benefit because they would have the capability to cover the costs associated with higher prices while smaller firms would be forced to increase prices, thereby reducing revenue. While this opinion was warranted, it overlooked one important tool that large corporations have been using for decades, the foreign-trade zone. According to Steve Katz, Manager of the United Chemi-Con plant in Lansing, North Carolina, foreign-trade zones are "one of the few tools that we have at our disposal to significantly reduce the impact of these tariffs" (Mayeda & Niquette, 2018).

Interestingly, this article puts into perspective the benefits received by large corporations from the confluence of the Trump tariffs and foreign-trade zones. United Chemi-Con is the largest producer of aluminum electrolyte capacitors in North America (United Chemi-Con, 2015) and is a subsidiary of the Japan-based transnational corporation Nippon Chem-Con Corp. (Nippon Chem-Con Corp., 2018). According to its yearly income statement from 2018, Nippon accumulated $1.26 billion in revenue, a $160 million increase from the previous year (Nippon Chem-Con Corp., 2018). Nippon was not the only major corporation benefiting from foreign-trade zones in 2018, as ExxonMobil, Marathon Petroleum, and Motiva Enterprises topped the list of untaxed foreign merchandise received (Ross & Mnuchin, 2019).

Understanding the benefits afforded to major corporations in the wake of the Trump tariffs, news organizations began touting the benefits of foreign-trade zones. Two days after the steel and aluminum tariff proclamations were signed, NBC News published a story directing companies on how to avoid these tariffs. According to Edelman (2018), the use of foreign trade zones "would help companies looking to unburden themselves of Trump's just-announced tariffs." The article interviewed Charles Wood, Vice President of Economic Development in Chattanooga, Tennessee, who claimed that the number of foreign-trade zones had noticeably

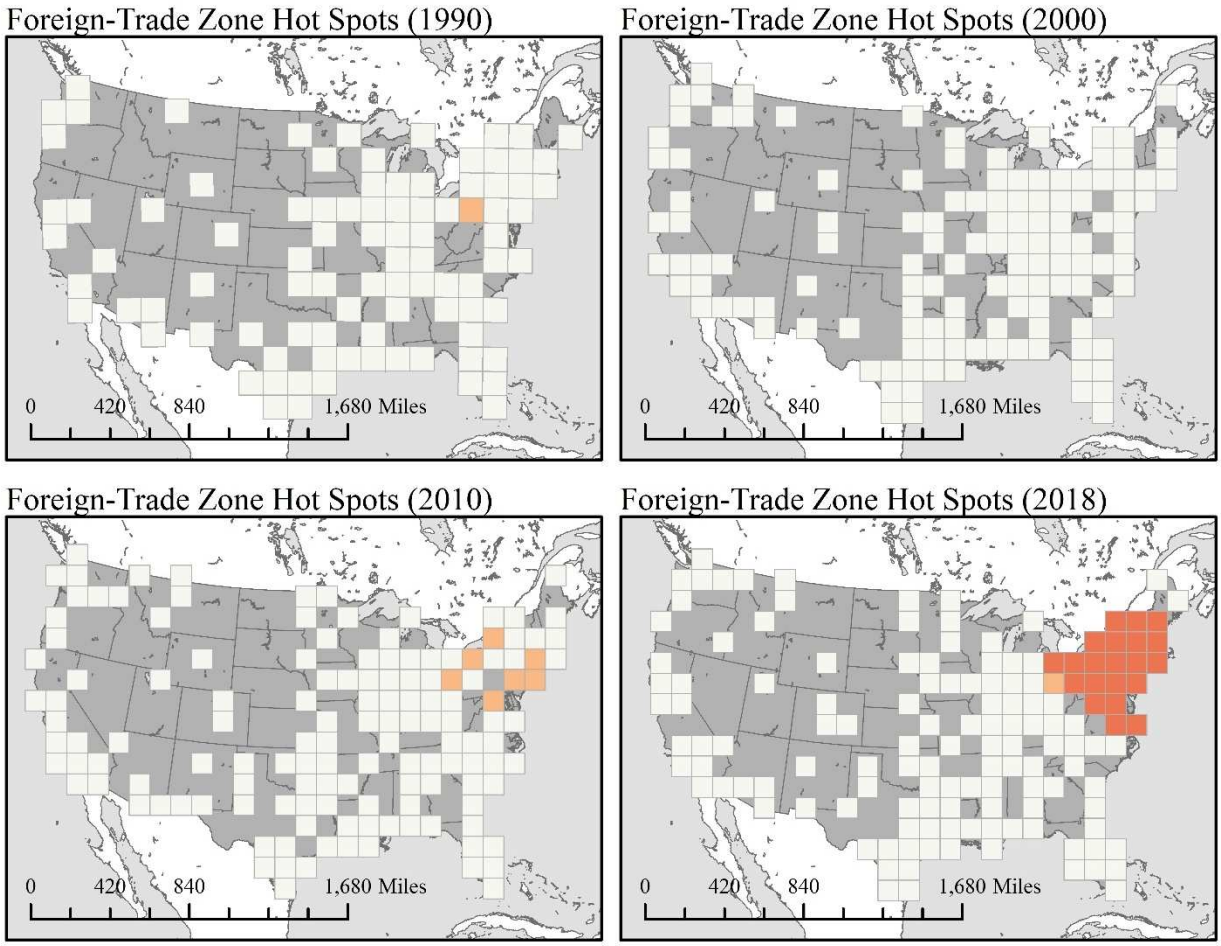
increased since President Trump took office. However, this spurious claim can easily be refuted by data from the Foreign-Trade Zone Board. Between 2015 and 2018, the number of approved zones had actually declined from 262 to 260, while the number of active zones slightly increased 186 to 195 (Ross & Mnuchin, 2019), a similar rate of growth to the previous four years (Pritzker & Lew, 2015).

In an interview on National Public Radio (NPR), *Morning Edition* host David Greene interviewed journalist Atossa Abrahamian, Associate Professor of American Studies at the Columbian College of Arts and Sciences, Dara Orenstein, and the President of NAFTZ, Erik Autor on the history of foreign-trade zones. While introducing the topic, the host made an insightful statement on the origins and true purpose of foreign-trade zones when he said "it's worth noting almost as soon as Congress enacted those tariffs, Congress enacted laws to help people get around those tariffs.". According to Dr. Orenstein, "protectionism is great for business for foreign trade zones" (Abrahamian, Orenstein, & Autor, 2018). As protective measures are instituted to promote domestic growth, major corporations who are able to afford the application fees and legal teams to petition the Foreign-Trade Zone Board are able to avoid these tariffs all-together. Major firms across the country are provided a competitive advantage by the state while other companies are forced to comply with tariff laws.

While the modern era witnessed an increase in inequities between firms, it was also an era of increased spatial inequality between regions. Between 2000 and 2018, foreign-trade zones continued to concentrate in the Northeastern United States (Figure 4). In 1990, significant clustering of foreign-trade zones occurred in southwestern Pennsylvania (Mosbacher, Brady, & Stone, 1991). However, by 2000, a number of new zones were established in California and Oregon (Mineta & Summers, 2001) thereby removing any significant clustering in the Northeast.

By the beginning of the next decade, several new zones appeared in western Pennsylvania and throughout the BosWash Megaregion (Locke & Geithner, 2011), leading to significant hot spots in 7 sub-regions across the Northeast. More zones were added to central Pennsylvania and New York by 2018 (Ross & Mnuchin, 2019), resulting in a significant clustering of 22 sub-regions across the Northeast. That same year, 43 out of the 260 approved foreign-trade zones across the United States were located in the Northeast alone (Ross & Mnuchin, 2019). Of the 260 approved zones, 223 were located in metropolitan areas while just 37 were located in micropolitan or rural areas (Ross & Mnuchin, 2019; U.S. Census Bureau, 2018a). Throughout this period, major metropolitan centers and Northeastern states were benefiting from inverted tariffs while the rest of the country continued to pay higher duties on imported materials.

Figure 4. Optimized Hot Spot Analysis if Foreign Trade Zones



Note. Data were referenced from each Foreign-Trade Zone Board Report for the given year provided in the figure (see references).

[a] Significant clustering ($p < 0.05$) occurred in the Northeastern Continental U.S. beginning in 2010 and increased by the end of 2018 ($p < 0.005$).

It was clear by the late 2010s that foreign-trade zones had become an afterthought in Congress and had largely been placed under the control of Foreign-Trade Zone Board. In 2018 alone, 224 documents were published and 211 notices were issued by the Board (Foreign-Trade Zone Board, 2018) while Congress issued no legislation on the matter (Library of Congress, 2018). Power over the future of foreign-trade zones had been passed from elected officials into

the hands of unelected bureaucrats who could approve zones with relative impunity, leading to a significant clustering of zones in the Northeast, the wealthiest region in the United States in 2018 ("Income and Wealth in the United States," 2019). The growth of zones in major urban centers across the country resulted in major transnational corporations profiting from these policies while many rural areas and small businesses were unable to benefit, a result that is inevitable under place-based neoliberalism.

Foreign-Trade Zones in Context

Place-based neoliberalism as its presented in this dissertation is a form of neoliberalized space by which the state actively works with private firms to demarcate space for the benefit of the few over the many. Unlike arguments made by Harvey (2005) that neoliberalism is defined by the promotion of free markets, property rights, and free trade, the analysis performed in this chapter has determined that place-based neoliberalism (i.e., foreign-trade zones) exemplifies what Brenner and Theodore (2002) called 'actual existing neoliberalism' whereby the state and corporate institutions fuse into a new form of public/private governance. The resulting spatial form has created a post-democratic space of which state and corporate entities actively limit public access to space that has been established for the explicit purpose of benefiting the public good. Foreign-trade zones are one of the earliest examples of place-based neoliberalism in the United States and have a long history of public/private collaboration to ensure elite institutions and corporations benefit. The zone found its beginnings when Austin Corbin, a railroad magnate from Long Island, petitioned Congress to establish a free port in Fort Pond Bay (Montauk), New York. He worked closely with the Army Corps. of Engineers to encourage compliance in Congress. Senator William P. Frye & Representatives Richard McCormick managed to introduce bills in both Houses but they failed to reach the floor for a vote (H.R. 3813, 54th Cong., 1st

Sess., 1895; S. 561, 54th Cong., 1st Sess., 1895). The bills failed to pass but the idea had officially entered public lexicon.

Over the next twenty years, civics and business groups such as Merchants' and Manufacturers' Exchange of New York, Civic League of Staten Island, Merchant's Association of New York, and Chambers of Commerce across several major cities worked with the Department of Commerce, Commission of Immigration, the War Department, the Department of Treasury, and the United States Tariff Commission to place pressure on Congress. Prominent politicians such as Representative G. Murray Hulbert, Philadelphia Mayor Thomas B. Smith, Representative J. Y. Sanders, and Senator Wesley L. Jones actively promoted free ports, but the majority of Congress was not interested.

While Congress was debating the efficacy of free ports, war had broken out in Europe and the United States had been drawn into conflict. By the end of World War I, ideas about trade and internationalism were being discussed as methods to promote peace. The Great War would be used as a catalyst to promote free trade and free zones. Major newspapers worked with supporters of free ports to change the narrative on the topic, linking free ports and free zones to international peace ("Moscow Again Russ Capital; Peasants Flee," 1918; "Moscow is Capital of Russia, Decree," 1918; "Moscow to be Declared New Capital of Russia," 1918; Associated Press, 1918). In fact, a portion of Woodrow Wilson's Fourteen Points called for the creation of free ports across major cities in former Central Power countries (Wilson, 1918).

Even with catastrophe brought on by World War I, the majority of Congress did not support free trade policies such as free ports. Supporters during this period claimed that free ports would not impact protectionist policies and would promote exports. However, opponents like the *American Economist* trade journal argued that free ports were a stepping stone to free

trade ("The Free-Port Question," 1918). It turns out that their predictions were accurate. The year the Foreign-Trade Zone Act was passed, the Reciprocal Trade Agreement Act was signed, giving the President the authority to remove tariffs with little congressional oversight (19 U.S.C. § 1351, 1934). By 1948, the United States signed the General Agreement on Tariffs and Trade (19 U.S.C. § 3501, 1947) and would become a full member of the World Trade Organization, a treaty organization built on free trade.

It was clear that many Americans were opposed to free trade and free ports, so supporters needed to obfuscate the language of future bills. Free ports were renamed to free zones in 1918 (H.R. 10892, 65th Cong., 2nd Sess., 1918; S. 4152, 65th Cong., 2nd Sess., 1918) but the term "free" was poisonous. The Tariff Commission proposed the term neutral zone but it did not stick (Taussig, et al., 1918). Eventually free ports would be renamed to foreign-trade zones with the extra hyphen to conceal the word "foreign" from potential critique. Proponents admittedly molded the opinions of the public and chose an ambiguous term for free ports to hide the true purpose of foreign-trade zones (Morris, 1939).

Even after the name was changed, opponents warned of an unfair competitive advantage provided to firms within these zones (*Free Zones in Ports*, 1919) and resulting uneven development between coastal urban centers and the rest of the country ("House is Expected to Pass Scott Bill," 1921), both of which came true. By 2018, foreign-trade zones had significantly clustered in the Northeastern United States and 86 percent of all approved zones were located in major metropolitan centers (Ross & Mnuchin, 2019; U.S. Census Bureau, 2018a), thereby leaving the poorest regions of the country without the benefits of inverted tariffs.

Ultimately, place-based neoliberalism results in uncompetitive markets and uneven development patterns, especially in the case of foreign-trade zones. While no direct evidence is

available proving supporters of foreign-trade zones had the intention of denationalizing territory for the sole benefit of major corporations and coastal metropolitan areas, indirect evidence is present suggesting supporters were well-aware of what was happening. Shortly after the Foreign-Trade Zone Act was signed into law, both Congressmen Ellsworth Buck and Emanuel Celler admitted that foreign-trade zones were no longer part of domestic territory (Celler, 1946; *Foreign-Trade Zones*, 1948). Congress no longer had control over the territory, as the ultimate authorities over zone operations would consist of the Foreign-Trade Zone Board and the corporations that owned the land. Congress had created a new type of shared governance between public and private institutions. Or, in the words of Brenner, Peck, and Theodore (2010), the state had established "'hybrid' institutional landscapes in which commodifying and market-constraining logics commingle and co-evolve" (p. 189).

Major financiers and industrialists such as John J. Donovan and John D. Rockefeller Jr. used their influence in government to promote the idea of foreign-trade zones. Congress was still unable to accept the idea of free ports so proponents would eventually use the Great Depression and Smoot-Hawley Tariffs as catalysts to prompt a newly elected Democrat majority Congress to pass the bill. It would be many years before the effects of this legislation could be seen on a wide scale, but it would be clear who directly benefited from foreign-trade zones. By the 2010s, petroleum, automobile, consumer electronic, pharmaceutical, and machinery firms were the largest beneficiaries of inverted tariffs (Bryson & Geithner, 2012; Ross & Mnuchin, 2019). In addition, the Rockefeller Group would eventually own major portions of real estate property in foreign-trade zones across eleven states (*Rockefeller Group International, Inc.*, 2020). Wealthy industrialists had worked directly with government officials and bureaucracies to ensure the establishment of foreign-trade zones and they directly benefited from this legislation.

Placed-based neoliberal programs such as foreign-trade zones provide favored corporations the benefit of "free trade" while the remainder of firms continue to follow national tariff regimes. This has a spillover effect into local businesses and can benefit non-foreign-trade zone firms (Ghosh, Reynolds, & Rohlin, 2016), but it can have a negative impact on periphery communities, as foreign-trade zones "have a positive impact on economic development in major metropolitan areas and attract potential investment away from smaller communities without existing industry and infrastructure" (Lane, 2020, p. 154). Due to the collaboration between industrialists and the state, major corporations and some adjacent businesses were able to benefit, but the vast majority of the United States reaped no discernable rewards. This exemplifies the effect, and purpose, of place-based neoliberalism, a topic that has been largely ignored by the academic community.

CHAPTER III: SPATIAL AND TEMPORAL IMPACT OF FOREIGN-TRADE ZONES ON ECONOMIC DEVELOPMENT IN THE UNITED STATES

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Abstract

In 1934, the Foreign-Trade Zone Act was passed in order to ease restrictions on internationally traded goods, provide domestic firms with a competitive advantage over foreign companies, boost jobs in import/export businesses, increase exports, and promote economic development. The growth in the number of foreign-trade zones (FTZs) across the United States since 1934 has coincided with changes in treasury and customs regulations on dutiable goods. Even with the growth of FTZs, these zones have remained largely obscure to academia and the public at large. Few scholars have evaluated the effectiveness of FTZs at meeting intended goals and even less have analyzed the spatial impact on local populations. This research analyzed the spatial distribution of FTZs and its relationship with local development patterns as well as the temporal change of short- and long-term impacts from the addition of FTZs at the county level in the United States. Results from the spatial regression analysis suggest that FTZs have a significant impact on the spatial distribution of median household income, unemployment rates, and the number of manufacturing firms. However, geographically weighted regression results

reveal spatial non-stationarity within these results. Results from the temporal analysis suggest that FTZs may have short- and long-term impacts on unemployment rates and number of manufacturing firms, long-term impact on manufacturing employment, and no impact on median household income.

Introduction

Globalization of goods and services across international boundaries has led to a more interconnected business environment. This connection has largely been created by advances in new technology and changes in global trade policy. While some countries have benefitted from this interconnected relationship, others have not. Neoliberal trade policy (the reduction of trade barriers such as tariffs and duties) has benefitted a few individuals in the developed world by shipping secondary sector jobs to the developing world. Due to the growing division between rich industrialists and poor workers, a discussion has developed over the merits of neo-liberalism and free trade policy (Stiglitz, 2018).

In 2018, the U.S. government introduced tariffs on steel and other products (Proc. No. 9705, 2018), which resulted in the consternation of many economists around the United States. The largest concern for manufacturers was rising costs of industrial metals and raw materials, and subsequent increases in production costs (Layne, 2018). Because these tariffs may negatively impact profit margins for firms that depend on imported materials, businesses have shown more interest in the use of federally created foreign-trade zones (FTZ) to avoid local taxes and import tariffs (Edelman, 2018).

FTZs are designated zones within United States domestic territory where goods that enter and exit these zones are categorized as foreign products for re-export. Industries within these zones do not pay tariffs, excise taxes, duties or ad-valorem taxes on goods entering or leaving.

Under current law, once a product or commodity leaves the zone and enters US territory, taxes are applied (Bolle & Williams, 2012). Firms can apply for FTZ subzone status through the Foreign-Trade Zone Board, a subsidiary of the Department of Commerce. According to McGilvray (2018), FTZs exist in order to promote local economic development, provide a competitive advantage to local firms, promote the growth of international trade, and improve the domestic economy.

The idea of a duty-free zone located near shipping ports is not a new phenomenon, having been implemented as far back as the 1st Century BCE in Delos, Greece (Easterling, 2016). Based on this ancient model, the Foreign-Trade Zone Act was passed by Congress in 1934 during the height of the Great Depression, with the intent that it would improve supply chain transfers and promote exports (Bolle, 1999). Under the Act, the Foreign-Trade Zone Board was created under the jurisdiction of the Department of Commerce to regulate FTZs and oversee the approval of FTZ applications by interested firms. Initially, FTZs were limited in scope and tightly controlled by the Board (Bolle, 1999). The original intention of the FTZ was to promote economic growth during the depression era by removing customs on goods intended for re-export. Lawmakers hoped that this would attract the use of US port infrastructure by foreign freighters as a stopping point between long distance shipments (Kanellis, 1995).

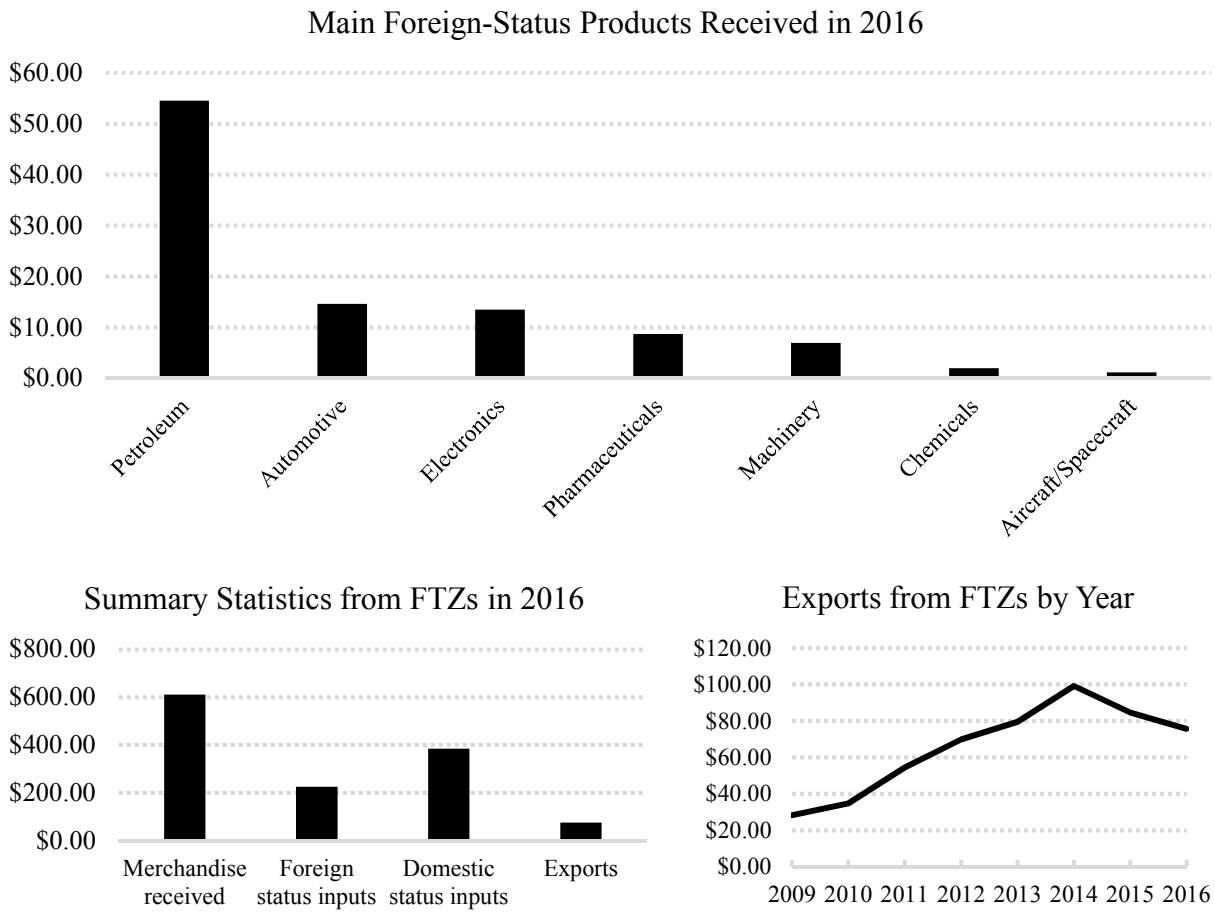
The adoption of FTZs across the United States was relatively slow during the first few decades, with only 7 zones created until the 1970s (Easterling, 2016). The number of FTZs increased substantially afterwards. As of 2016, there were 263 approved FTZs with a total of 195 active FTZs across the United States and Puerto Rico. The number of people employed in FTZ operations were approximately 420,000 in the same year (Ross & Mnuchin, 2017). The dramatic growth in FTZs has impacted the way these zones are applied across space. Today, FTZs look

very different from the days of its inception. Originally intended to act as free ports designated near ports of entry, FTZs allowed goods to be handled and manipulated without paying tariffs and duties. Those goods could then be exported without being taxed (Thoman, 1952). However, since the Boggs Amendment (Pub. L. No. 566, 64 Stat. 246, 1950) was approved in 1950 allowing for the inclusion of manufacturing firms, FTZs are more like export processing zones than free ports.

Export processing zones (EPZs) are enclaves within a country's boundary with reduced regulations, favorable taxes for production, and improved infrastructure for easy shipment for export-oriented industries (Warr, 1989). EPZs have been promoted by the World Bank and United Nations to promote neoliberalism in developing countries and primarily exist outside of the developed world (Easterling, 2016). Of course, FTZs and EPZs differ according to rules regarding environmental and labor regulations, but both have the same goals of promoting exports, manufacturing, foreign direct investment (FDI), and neoliberal trade policy (McCalla, 1990).

Today, FTZs are in all 50 US states and Puerto Rico. According to a recent report by the Foreign-Trade Zone Board, the top foreign-status products received in FTZs in 2016 were petroleum, automotive parts, electronics, pharmaceuticals, machinery, chemicals, and aircraft/spacecraft (Ross & Mnuchin, 2017). Approximately 63 percent of all materials received in FTZs were of domestic origin and $75.7 billion of goods were exported from these facilities. The total value of merchandise received equaled $610.4 billion and $225.3 billion worth of merchandise came from foreign soil. Exports since 2009 dramatically increased and peaked in 2014, with a total of $99.2 billion in merchandise (Ross & Mnuchin, 2017) (Figure 5).

Figure 5. Summary Statistics for Foreign-Trade Zones in the U.S.



Note. Data include all fifty states and Puerto Rico. All data given in billions U.S. dollars. Data referenced from Ross and Mnuchin (2017).

FTZs are distinctly geographical phenomena that cannot exist without spatial consideration. Place-based policies such as FTZs designate certain geographic areas to receive governmental benefits while other areas do not receive the same. According to the Foreign-Trade Zone Act, each port of entry is awarded a minimum of one zone at each location (19 U.S.C. § 81b, 1934). Subsequent regulations created the subzone, which allows firms that are not within 60 miles of a port of entry to apply for FTZ benefits (17 Fed. Reg. 5316, 1952). Approved subzone applicants are placed under the statute of the nearest FTZ grantee within the same state.

If grantees of another state consider it necessary for the public good, grantees from neighboring states can accept responsibility for the new subzone (15 C.F.R. § 400.22, 2012). Grantees can consist of public corporations, city councils, or county governments (15 C.F.R. § 400.21, 2012).

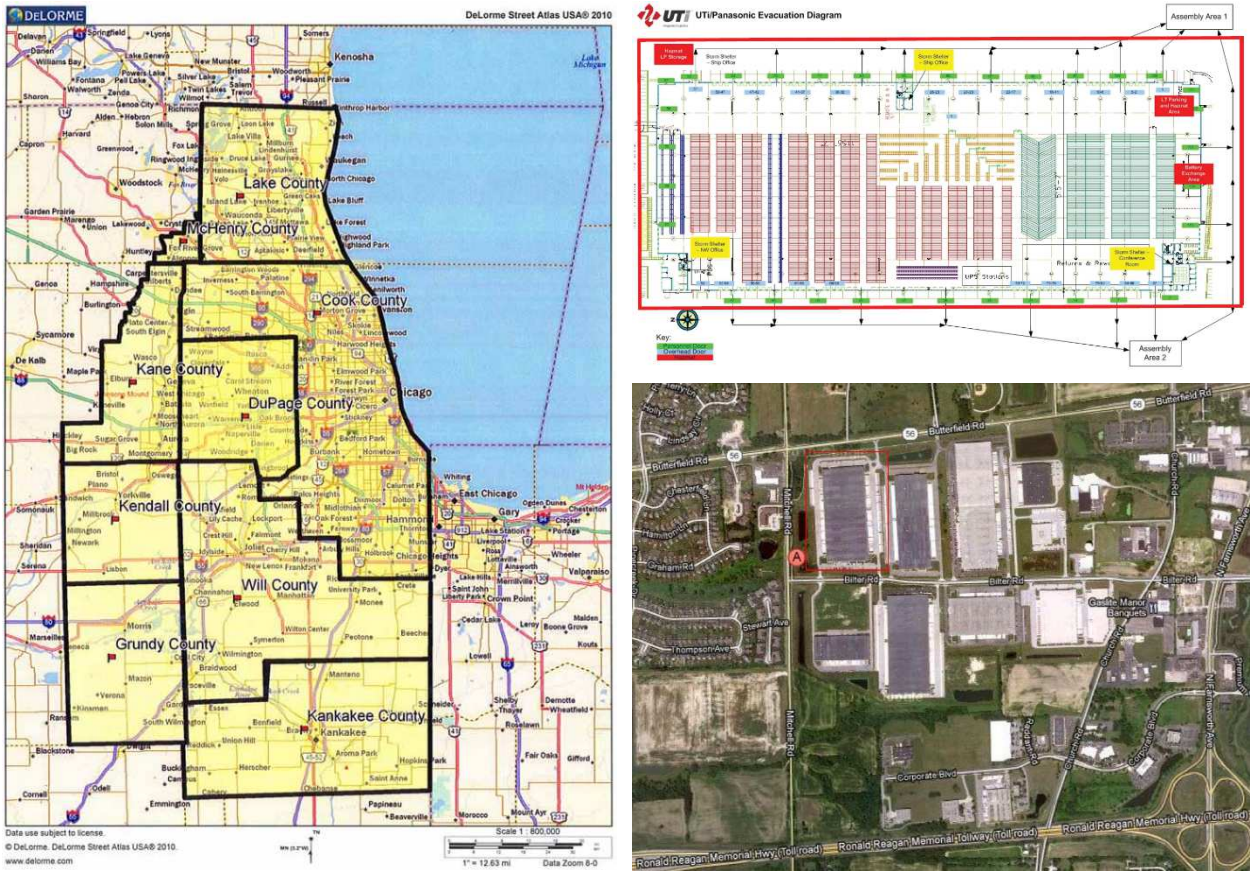
The creation of general-purpose zones and subzones transcend local, county, state, and national boundaries (Orenstein, 2011). Once a product enters a zone or subzone, it is not subject to national tariffs, duties, or excise tax until it reaches domestic markets, allowing corporations to avoid costs that their competition must pay (deKieffer & Thompson, 1985). This same tax avoidance applies to local state taxes as well. Firms within FTZs are exempt from ad valorem taxes unless the *original* good brought into the zone/subzone reaches the local market (Horwitz & McArthur, 1985). If a product, such as a car radio, is shipped into a Chevrolet FTZ and installed into a recently built Camaro, the car can be sold into the domestic market without paying any of the previously mentioned taxes (Orenstein, 2011).

Zones and subzones differ from other types of place-based economic policies due to the way they are created. Unlike export processing zones, free ports, and special economic zones, general purpose zones and subzones are applied for directly by the firms that wish to benefit from inverted tariffs. After a letter of intent is sent to the nearest grantee, an executive summary and a series of legal applications must be completed before zone/subzone status is granted (15 C.F.R. § 400.24, 2012; 15 C.F.R. § 400.25, 2012). Once the application, detailed explanation of its geographic location, and application fees are submitted to the Foreign-Trade Zone Board, the approval process can take between 10 months and 1 year depending on the type of activities performed on-site (15 C.F.R. § 400.27, 2012).

General purpose zone, subzone and site location information is available on the Foreign-Trade Zone Board's official website and a portion of the original application can be viewed by

the public (International Trade Administration, 2019). While maps are required to be produced during the application process, they are not always available for public consumption. Service area maps are often presented as general reference maps with polygons drawn around the service areas. Site location maps are presented as satellite images or blueprints with polygons outlining the FTZ firm (Figure 6).

Figure 6. Map, Blueprint, and Satellite Image of FTZ 22 in Chicago, Illinois



Note. Maps and blueprint referenced from International Trade Administration (2020)

[a] Map on the left is the service area for FTZ 22 in Chicago, Illinois. [b] The blueprint and map on the right show the location of Panasonic Corporation of North America's FTZ site 28.

Due to the dramatic growth in the number of FTZs over the past three decades and growing concerns over tariffs on raw materials, it is likely that FTZ applications and approvals

will increase in the next few years. This may have a significant impact on the spatial distribution of incomes, employment, and clustering of manufacturing firms. While this is the case, scholars have largely focused on the issues unrelated to place-based development patterns and spillover into the local community. This may be in part because previous studies reviewed in this paper have come from the fields of economics, logistics, business, and marketing. Few scholars have approached the study of FTZs from a geographic perspective. For this reason, we attempt to take a new approach at analyzing the effectiveness of FTZs at meeting legislative intent. As such, this paper applies various spatial statistical methods to determine the impact of FTZs on developmental patterns at the county scale.

Literature Review

Foreign-trade zones (FTZs) are the result of place-based policy measures used by corporations and the federal government to promote manufacturing and export led development. FTZs have greatly benefited several firms and continue to be a growing part of neoliberal trade policy measures. While the original intent of the Foreign-Trade Zone Act was to promote exports, increase domestic competitiveness, and promote manufacturing at home, the modern FTZ and subsequent Boggs Amendment worked as conduits for public/private cooperation on a spatial scale (Kanellis, 1995). Much of the research discussed in this paper has focused on the geographic distribution of FTZs, the effect of FTZ benefits on individual firms, and resulting impacts on total US exports.

The Geographies of Foreign-Trade Zones

Duty free zones and FTZs are created by governments to close trade barriers and promote local/regional development. According to McCalla (1990), these zones are geographic in nature and agglomerated near infrastructure space to encourage economic growth. While FTZs are

granted by the federal government, they exist outside of the purview of government control. These zones are a type of extraterritorial phenomena that exist beyond current political boundaries and transcend government control of tariffs and trade. Orenstein (2011) argued that the creation of FTZs in favor of frictionless production not only partially denationalized territory within FTZs, but also workers and products created within these zones. Other scholars have claimed that the creation of FTZs and other duty-free zones has resulted in graduated national sovereignty, where countries remove basic governmental rules such as taxes and/or regulatory barriers in a geographic location for pre-ordained firms (Neveling, 2015).

The partial denationalization of United States territory has coincided with international trade routes to create a distinct pattern of FTZs across geographic space. According to Thoman (1952), FTZs are attracted to proximity with ports of entry, national trading partners, and consumer markets. By 1952, the majority of FTZs were located along the East Coast of the United States due to population density and trade relations with Europe. Since 1952, the number of FTZs has increased from 6 (Thoman, 1952) to 261, the majority of which exist in states with coastal access to trade routes (International Trade Administration, 2019). According to Ross and Mnuchin (2017), Texas, Florida, California, New York, and Washington contain 96 of the total 261 FTZs across the United States.

The number of FTZs has expanded dramatically since its creation and may have an impact on development patterns across the United States. Place-based policies that create FTZs, free ports, and duty-free zones are designed to stimulate agglomeration among similar industries and promote research and development (Koo, 2005) According to Bobonis and Shatz (2007), place-based tax policies that lead to agglomeration can result in an increase in FDI. Agglomeration effects can also spillover into neighboring states within the United States. Head,

Ries, and Swenson (1999) found that FTZs have an agglomeration effect on Japanese manufacturers, which resulted in an increase in FDI from similar Japanese industries. Japanese investments in states that implemented FTZs, job-creation subsidies, and reduced taxes for Japanese industries outpaced investments in states that did not implement these measures. The study concluded that the removal of FTZs would have a significant impact on regional development and investment.

What are the impacts of FTZs on local and regional development and do FTZs cause spillover? Ghosh, Reynolds, and Rohlin (2016) used data on the zip code level between 2000 and 2009 to test for spillover from manufacturing FTZ firms to non-manufacturing firms. Results showed a significant increase in non-manufacturing firms in the same zip code and neighboring zip codes once FTZs were added. Other researchers focused on the impact of FTZs on economic development. According to Lane (2020), FTZs have a significant impact on spatial development patterns and may have exacerbated spatial inequality in the Southeastern U.S. Results from that study found that FTZs were significantly related to patterns of income, unemployment, and the number of manufacturing across the landscape in the Southeastern US. Analyses implemented in this paper are a continuation of the methods performed in Lane's earlier study.

Potential Benefits of Foreign-Trade Zones

Initial research on the effectiveness of FTZs focused on the impact of FTZ subzone status on corporate profit margins. During the height of FTZ subzone expansion, Ferguson (1989) analyzed the impact of FTZs on the total cost of imported products to the United States and exported products outbound for foreign countries. This study categorized goods into three separate categories, detailed the benefits of using FTZs to facilitate the production and shipping of these goods, and performed a cost/benefit analysis to determine if FTZs could provide cost

savings to firms. Results suggested that firms expecting large shipments could greatly benefit from FTZ subzone status but firms expecting smaller shipments would incur much higher costs if it resides within an FTZ subzone. Other researchers argued that FTZs would incentivize industries to remain on U.S. soil, thereby improving domestic employment (Sheppard, 1977). By removing customs and duties on foreign materials, U.S. firms could remain close to the market. Proximity to market would keep prices low and provide employment benefits to local populations.

FTZs have many potential benefits that firms can utilize, such as theft reduction due to increased FTZ security, lower cost of insurance, removal of state issued inventory costs, removal of excise taxes, delayed payments of tariffs and excise taxes, and a reduction in costs associated with labelling. According to McDaniel and Kossack (1983), FTZs benefit manufacturing firms that import finished products over those that export finished products to other countries. Warehousing industries benefit very little from FTZ status. In a similar analysis, Hanks and Van Alst (1999) found that additional cost-savings occur when firms import component parts from foreign destinations that require further processing. Because customs duties are not levied on component parts in FTZs, firms enjoy an additional reduction in federal taxes and paperwork costs are significantly reduced for firms in FTZs. According to Beeman and Magill (1988) "FTZs can help reduce the weakening competitive position of many U.S. firms" (p. 17). A reflection of its time, this article argued that U.S. firms should take advantage of FTZs to remain competitive against similar firms in South Korea, Japan, Singapore, and Hong Kong.

Studies discussed so far considered net benefit for firms using FTZs but did not distinguish between short-term and long-term benefits. According to Aron (2002), subzone status allowed some companies to benefit from decreased duties and increase sales output in domestic

markets. While these benefits are preferable in the long-term, the subzone application process can be expensive in the short-term. Additionally, firms not directly involved in exports and imports will not see the same benefits. Firms that import raw materials and pre-manufactured goods will benefit the most from FTZ subzone status.

While these studies provided important information, they worked more to promote the use of FTZs than evaluate the effectiveness of these zones at achieving intended goals. Some scholars were more upfront regarding promoting the use of FTZs. According to Robles and Hozier (1986), FTZs are an important mechanism for providing a competitive advantage to US firms "and help attract direct investment to state and local economic development projects" (p. 53). Using the competitive analysis framework, firms can effectively appropriate resources to different regions of the supply chain and create pertinent marketing strategies for each zone. Other researchers echoed this argument and advertised the use of FTZs as way to facilitate trade and reduce costs. According to Sullivan (2000) FTZs encourage competition in the global marketplace by reducing costs incurred by domestic firms. Additionally, firms are no longer limited to general purpose zones near ports. Firms in the geographic interior can benefit from the use of subzones.

Other scholars compared firms using FTZs to firms not using FTZs in order to determine net benefits between groups. According to Tansuhaj and Gentry (1987), FTZ firms export and import significantly more products than non-FTZ firms. However, FTZ firms had significantly smaller sales volume and significantly more foreign firms used FTZs than domestic companies. In another study, Tansuhaj and Jackson (1989) found that non-FTZ firms were unaware of the benefits, and in some cases the existence, of FTZs as a cost-saving venture. Non-users often viewed FTZ services as non-beneficial, therefore they chose not to take advantage of FTZ

legislation. That study concluded that FTZ firms have a higher percentage of exports than non-FTZ firms and non-FTZ firms should be made aware the benefits of using FTZs to increase their competitive advantage.

Foreign-Trade Zones, Site Location, and Supply Chains

While studies discussed thus far tended to promote the use of FTZs as a cost-reduction measure, other scholars focused on the firm and management level to explain local dynamics. Swenson (2000) focused on the role of outsourcing in firms within FTZ subzones. Findings from that study show that as the value of the US dollar declines (i.e., inflation), firms in FTZs significantly reduce their use of foreign inputs. The increase in price caused by inflation led to a reduction in foreign input shipments by FTZ firms. This study also found that gross shipment value did not decline significantly, implying that these firms adjusted input purchases toward domestic suppliers.

Other scholars focused on site location and management roles in marketing FTZs. According to Cornwell (1989), FTZ managers base subzone location decisions on resource location, market proximity, and labor market location. Subzones are often dependent on proximity to international markets. General purpose zones are similar to retail site locations in terms of distance to markets, market demand, entrepreneurship growth, and land value impact location decisions. Just like any industrial location theory, FTZ site locations are determined by market principles and the structure of the supply chain. These scholars focused on the impact of FTZs on decisions made by both firms and FTZ management in relation to site location and supply chain management but provided no evaluation of FTZs as mechanisms for increasing exports, providing a competitive advantage for firms, and/or promoting local development.

Effectiveness of Foreign-Trade Zones in Meeting Legislative Intent

Some scholars have argued that the Foreign-Trade Zone Act was passed by Congress so that domestic firms could avoid the duties applied to imported materials by the Smoot-Hawley Tariff of 1930. This took place during the height of the Great Depression and Congress was looking for ways to increase domestic production and exports (Abrahamian, Orenstein, & Autor, 2018). Congress intended for FTZs to act as conduits for export-led development and the promotion of international trade. According to House Resolution 9322 (1934), FTZs were created "to expedite and encourage foreign commerce." While the intent was vaguely worded, a subsequent Senate Report stated that FTZs were designed to remove customs duties "for re-export to foreign markets and for conditioning, or for combining with domestic products previous to export" (*S. Rep. No. 905*, 1934).

As more zones and subzones were created in the 1980s and 1990s, scholars began analyzing the effectiveness of FTZs at meeting intended goals. In a study comparing total exports between FTZ firms and non-FTZs firms, Mathur and Ajami (1995) found that firms within FTZs performed significantly better in export manufacturing markets. While these results are important, this study also found that FTZ firms were more aware of benefits from the removal of customs duties and tariffs, therefore these firms often imported more materials. Later studies showed some interesting results. According to Mathur and Mathur (1997), the creation of a new FTZ did not lead to an increase in exports; most FTZs were created after an increase in exports and provided no statistically significant rise in exports after their creation. Results also showed that a feedback loop existed between FTZs and re-exports; as reexports increased, FTZs were created and as more FTZs were created, re-exports increased.

Some scholars included other variables in their models to determine the impact of FTZs on imports under various circumstances. Miyagiwa (1986) designed a model measuring the impact of FTZs on exports and the diversification of industries nationwide. Results from this model suggested that FTZs would promote exports if the subsidies provided by the FTZ were small compared to the size of the tariff. When a country instituted high tariffs, FTZs would greatly benefit firms that depend on unfinished imports.

Other scholars argued that while the intention of FTZs was to promote exports, it has fallen short of its goals. These zones may have promoted the growth of imports. While failing to produce the intended results, FTZs have improved the facilitation and transportation of foreign and domestic goods by promoting the development of centrally located distribution sites to alleviate intermodal cost (Seyoum & Ramirez, 2012). Other studies showed similar results. According to Seyoum (2017), government levied inverted tariffs (i.e., FTZs) promoted the growth of imports instead of exports and re-exports. This study also determined that firms using FTZs as a tariff avoidance strategy were more likely to purchase goods from international firms that use cheap foreign labor. Overall, FTZs have led to an increase in imports, reduction in exports, and an increasing dependency on cheap foreign labor.

There has been a heated debate between politicians about the role of FTZs and how they have impacted employment in the traditional manufacturing sector. The Foreign-Trade Zone Board has been hesitant to step in to regulate FTZs, leaving Congress to pass legislation expanding the role of FTZs in the manufacturing sector (deKieffer & Thompson, 1985). According to a Bolle (1999), amendments to the Foreign-Trade Zone Act reveal that congress has shifted its attention away from export-led growth toward import promotion. Additionally, jobs have been negatively impacted by the rise in the number of FTZs across the United States.

The significant increase in FTZs in the 1980s led to a 1.9% reduction automobile manufacturing jobs. With the creation of NAFTA in 1994, job loss was rampant in the manufacturing industry, further enhancing the negative effects of FTZs on employment.

Some studies have focused on the attraction of FDI, showing that FTZs may have an impact on FDI in certain states in the United States. Head, Ries, and Swenson (1999) focused on Japanese investment in the United States between 1980 and 1992, a period that saw one of the largest growths in FTZs across the United States. This study created a model to test the geographic distribution of Japanese investment in the United States, determining that FDI from Japan was significantly higher in states with FTZs, lower tax rates, and job-creation subsidies. Foreign investment can have a profound effect on the economic growth of a country. Hamada (1974) created a trade model to test the impacts of duty-free zones (similar to FTZs) on economic growth and results from this model show that without FDI, duty-free zones do not improve economic performance.

The location of FTZs can have a major impact on economic development as well. Miyagiwa (1993) compared rural and urban FTZs to see if there were any significant differences in national economic output. This study concluded that FTZs located in rural areas had a significantly stronger impact on national income. The benefits were negligible when tariffs are low but were significantly greater when tariffs were high. Other scholars suggested that duty-free zones, such as FTZs, may negatively impact economic growth (Young, 1987), but these models assume full employment. According to Young and Miyagiwa (1987), when duty-free zones were established in a country with high unemployment, national income would increase. Evidence for the effectiveness of FTZs on meeting legislative intent is conflicting and more research is needed to better understand the impact of FTZs on the domestic economy.

Critiquing Foreign-Trade Zones Against Original Intent

Conflicting results from studies evaluating the effectiveness of FTZs at meeting original intent has led scholars to question the validity of these goals and critically evaluate the purposes of FTZs. Some scholars have argued that the Foreign-Trade Zone Board promised more than it could deliver. According to Kanellis (1995), the Foreign-Trade Zone Board has guaranteed that FTZs "will operate in the public interest", therefore it has "overstated its capabilities" (p. 629). This article argued that it is impossible to accurately measure FTZs impact on employment and other local/national development.

Other issues arise when firms are following the FTZ approval process, further contradicting the original intent of promoting local development and domestic competitive advantage. Kanellis (1995) stated that once a firm finishes the application process for subzone status, the application is made available in the Federal Register but not shared with the local population. Because of the secretive nature of the subzone process, competing firms may not be aware of the newly designated subzone unless they continuously check the Federal Registry. This process makes it difficult to contest the approval of a competing firm within the required sixty-day waiting period. Because of the ultimate power granted to the Foreign-Trade Zone Board in the approval process and secretive manner at which subzones are granted, FTZs provide an unfair competitive advantage to companies that are well versed in the program.

Some scholars have argued that the significant reduction in manufacturing employment and increase in imports were not just accidental. According to Orenstein (2011), FTZs partially denationalized territory for use by corporations in order to promote frictionless handling and give certain firms a competitive advantage over other firms; it was never about promoting exports and bolster local development. The FTZ is a means for manufacturing firms to import raw and/or

processed materials from countries with cheap labor. These firms can manufacture products, avoid paying customs duties and tariffs, and place a 'Made in the U.S.A' tag on the finished product. Horwitz and McArthur (1985) argued that nature of FTZs as a tax-avoidance venture runs contrary to States Rights explicitly stated in the Tenth Amendment of the United States Constitution. Supreme Court decisions have concluded that Commerce Clause and the Import-Export Clause give the Foreign-Trade Zone Board the executive authority to exempt FTZs from state and local taxes on goods entering those zones.

Previous FTZ research has provided some interesting results on the impact of FTZs on corporate profitability, cost-reduction, supply chain connectivity, exports, and employment. However, there are few studies having analyzed the impact of FTZs on local/regional development patterns. Scholars and researchers have largely overlooked the spatiotemporal relationship between FTZs, income, unemployment, and manufacturing firms. Understanding the current lack of geographic research in FTZ literature and the importance of FTZs in the future, this paper employs contemporary quantitative methods commonly used in the field of geography in order to explore the effectiveness of these zones on the surrounding communities.

Theoretical Framework and FTZ Spillover

While literature exists regarding the underlying impact of FTZs on corporate profits, exports, non-manufacturing industries, and national income, only a few studies are on evaluating the FTZ spillover into the local economy. Ghosh, Reynolds, and Rohlin (2016) analyzed spillover by creating a temporal model for determining potential spillover from FTZs into non-manufacturing sectors. Their analysis was conducted at zip code level in which each zip code was categorized into FTZ, neighboring, or non-FTZ zip code. Time was used as a weighted variable to evaluate the impact of time on spillover into non-manufacturing businesses and

neighboring zip codes. Short-term impacts were calculated subtracting non-manufacturing employment 1 year before from non-manufacturing employment 1 year after the FTZ was added to the zip code. Long-term impacts were calculated by subtracting data 1 year before from 3 years after the FTZ was introduced. While this study showed a significant growth of non-manufacturing firms in zip codes with and bordering FTZs, it did not measure the welfare effects on the average person in those zip codes.

While FTZs may have a positive impact on non-manufacturing firms in local and neighboring zip codes, few studies have evaluated the impact and spillover of FTZs on local income. The Foreign-Trade Zone Board has stated that local communities should provide zone access "as part of their economic development efforts" (Foreign-Trade Zone Board, 2018, p. 6). Several studies have used the same scale to measure spillover due to the relative accuracy of estimated data and the interconnected relationships between major urban counties and neighboring counties (Boarnet, 1998; Dube, Lester, & Reich, 2010; Partridge & Rickman, 2007).

Spillover can be measured using several different types of methodologies in many different fields. In the case of Ghosh, Reynolds, and Rohlin (2016), spillover was measured by comparing FTZ counties and neighboring counties to control counties before and after FTZs were introduced. Another option for testing spillover is the use of spatial regression. As Anselin (2003) outlined, spatial regression models consider spatial autocorrelation at a certain scale and is used to measure spatial spillover of certain phenomena. Moreno, Paci, and Usai (2005) used spatial regression to evaluate spillovers of innovation in Europe. Their study analyzed spatial autocorrelation using Moran's I statistic for the purpose of understanding the extent of spatial dependence. Results showed that the highest value for spatial autocorrelation occurred at the first

order of adjacency. As such, first order queen adjacency was used to measure spatial spillover of innovation.

Spatial regression analyzes so-called global spatial relationships for the study area. It fails to consider spatial heterogeneity in the relationship between variables being analyzed. Geographically weighted regression (GWR) can be used to analyze differences in relationships across space and regional variation (Brunsdon, Fotheringham, & Charlton, 1996). Partridge, Rickman, Ali, and Olfert (2008) used GWR to analyze the relationship between county-level employment and a series of environmental and social variables, determining that both spatial non-stationarity and spillover occur between the variables included.

Data and methods

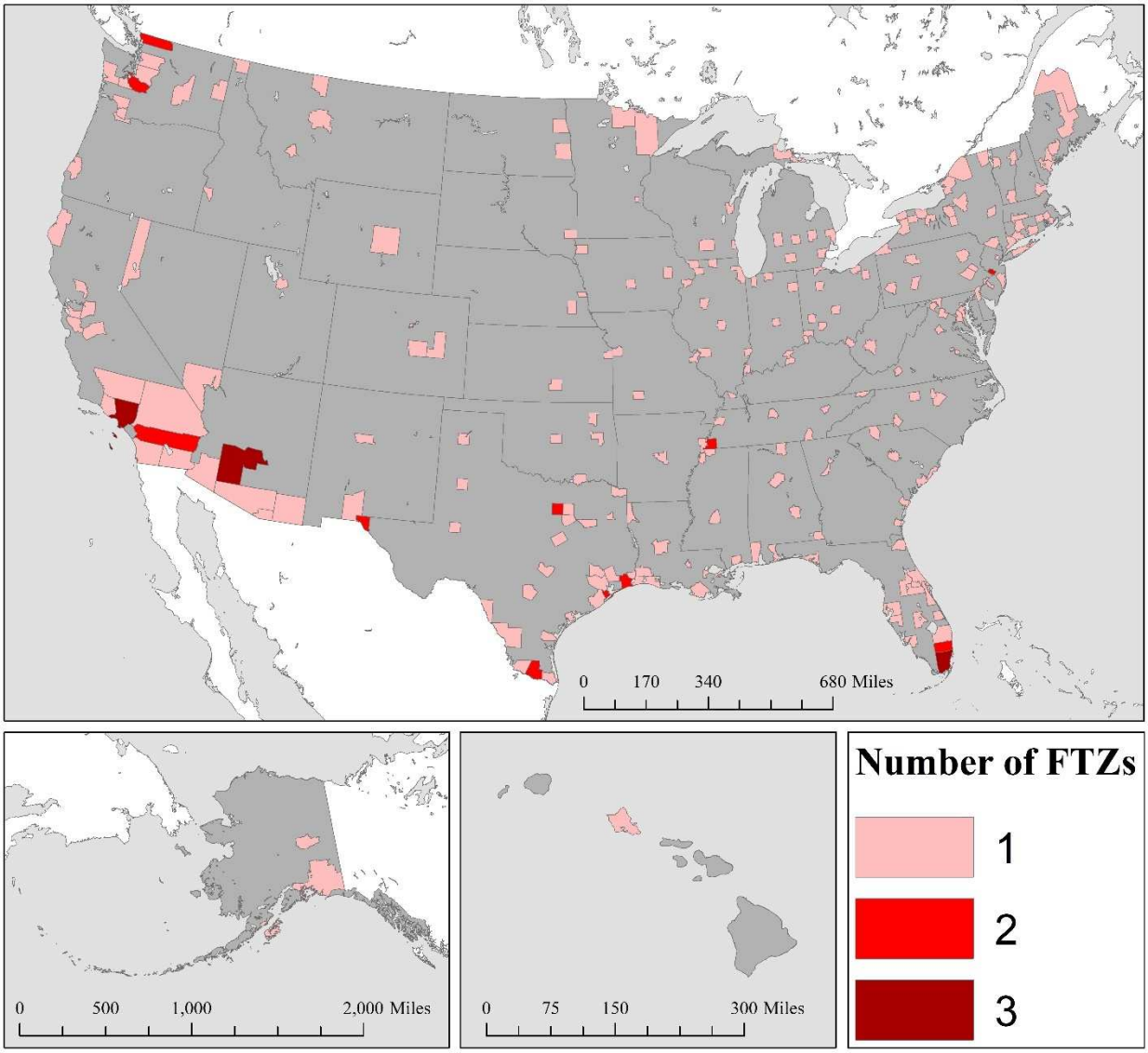
Data

Three types of data at the county level are collected for this study: (1) FTZ data are gathered from the *78th Annual Report of the Foreign-Trade Zone Board* (Ross & Mnuchin (2017).) and the International Trade Administration's *Online FTZ Information System (OFIS*) public information website (International Trade Administration, 2019); (2) economic data such as median household income, unemployment rates, and manufacturing employees are obtained from the US Census Bureau's Online Geodatabase (U.S. Census Bureau, 2017) and FactFinder website (U.S. Census Bureau, 2018b); and (3) manufacturing firms geospatial point data are compiled by Infogroup for use in ESRI ArcMap's Business Analyst software (Infogroup, 2018). All data are gathered into a database using Microsoft Excel Version 2016 and combined into a shapefile in ESRI ArcMap 10.6.

Currently there are 3220 counties in the United States and Puerto Rico. Puerto Rico was excluded due to a lack in manufacturing data and as such only 3142 counties were included in

the spatial analysis. A total of 255 FTZ zones across the United States were identified and included in the study (Figure 7).

Figure 7. Number of Foreign-Trade Zones by County for 2016



Note. Data referenced from Ross and Mnuchin (2017).

Spatial analysis consists of three components: (1) analysis of spatial dependency (spatial autocorrelation); (2) spatial regression, and (3) geographically weighted regression (GWR). Spatial dependency analysis is conducted for the following variables: median household income,

unemployment rate, and manufacturing firms. The same three variables are used as dependent variables in both spatial regression and GWR. The independent variables in the two types of regression analysis are number of FTZs, merchandize sold, exports, number of employees, number of firms, and active acreage (Table 1).

The same three variables mentioned above, i.e., median household income, unemployment rates, and number of manufacturing firms, plus number of manufacturing employees are included in temporal analysis. Annual data from the US Census Bureau's American Community Survey (ACS) are used. The ACS was created in 2000 to gather demographic data on a yearly basis but only included counties with a population greater than 65,000. In 2005 surveys were extended nationwide to gather yearly data on different scales using 5-year sample estimates. ACS 5-year estimates sample demographic data over a five-year period and are aggregated as a single year output according to the last year of the survey. The first of these 5-year estimates were officially released in 2009 (U.S. Census Bureau, 2018c). Yearly data derived from these 5-year estimates for the period from 2009 to 2017 are analyzed for the four variables (Table 1).

Table 1. Methods and Variables in Data Analyses

Spatial Dependency Analysis	Spatial Regression Analysis	Geographically Weighted Regression	Temporal Analysis
• Median Household Income (US$) • Unemployment Rates (%) • Manufacturing Firms	Dependent Variables • Median Household Income (US$) • Unemployment Rates • Manufacturing Firms Independent Variables • Number of FTZs • Exports (million US$) • Number of Employees • Number of Firms • Active Acreage	Dependent Variables • Median Household Income (US$) • Unemployment Rates (%) • Manufacturing Firms Independent Variables • Number of FTZs • Exports (million US$) • Number of Employees • Number of Firms • Active Acreage	• Median Household Income ($) • Unemployment Rates (%) • Manufacturing Firms • Manufacturing Employees

Methods

As shown in Table 1, analytical methods in this study are grouped into two major categories: spatial analysis and temporal analysis.

Spatial Analysis

Spatial analysis consists of three components: spatial dependency analysis, spatial regression analysis, and geographically weighted regression analysis.

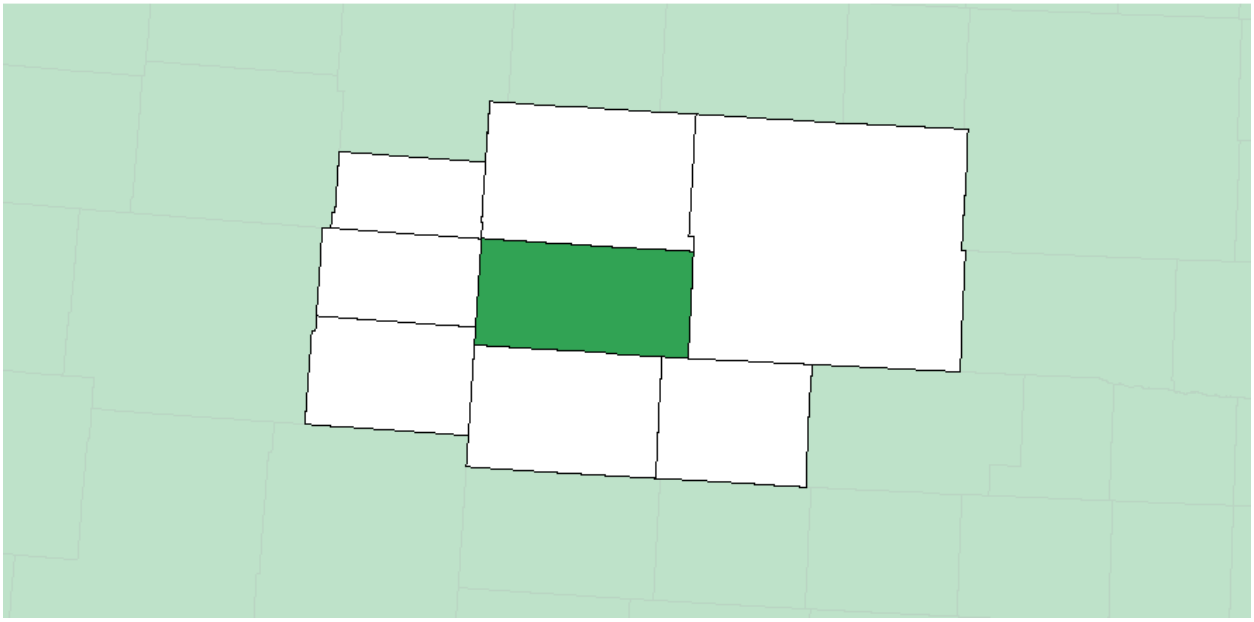
Spatial Dependency Analysis.

The first step in the spatial analysis is to conduct spatial dependency analysis to determine the existence and distribution of spatial autocorrelation. Spatial autocorrelation occurs when objects near each other are more similar in value than those that are further away (O'Sullivan & Unwin, 2010). For example, counties with high incomes are often adjacent to other counties with high incomes, implying spatial spillover. In this study, a widely used measure of spatial autocorrelation, Getis-Ord G_i, is used. For each unit of analysis, or location *i*, (i.e., a county in this study), Gi is calculated as follows,

$$G_i(d) = \frac{\sum_j^n w_{ij}(d)x_j}{\sum_{j=1}^n x_j} \quad i \neq j \qquad (1)$$

where x_j is the value in each neighboring location j, and $w_{ij}(d)$ represents its weight determined by *d*, its distance to location *i*. For the purpose of determining the adjacent neighbors and their weights, a first-order queen adjacency is used in calculation. Counties that share at least a corner with the county in question (the one in dark green in Figure 8) are given a weight of 1 and all others are given a weight of 0. The spatial dependency analysis using Getis-Ord G_i is conducted with ArcGIS. The result is a map that shows clustering of low values (cold spots) and high values (hot spots) of the variable being analyzed.

Figure 8. Example of First-Order Queen Adjacency



Note. Counties that contact edges and corners are given a weight of 1 and all others are given a weight of 0.

Spatial Regression Analysis.

Spatial regression considers spatial autocorrelation as an additional variable when analyzing the impact of one or more independent variables on a dependent variable. This is especially useful when considering demographic data, as spatial spillover is common (Chi & Zhu, 2007). In this study, three spatial regression models are developed for median household income, unemployment, and the number of manufacturing firms on FTZs, respectively. Specifically, the spatial lag method is the type of spatial regression model used in the analysis. The general form of a spatial lag model is given as follows:

$$y = \rho W y + X\beta + \varepsilon \quad (2)$$

where y is a vector of observations on the dependent variable, Wy is the corresponding spatially lagged dependent variable for weights matrix W, X is a matrix of observations on the

independent variables, ε is a vector of error terms, ρ is the spatial autoregressive parameter, and β is a vector of regression coefficients. The three spatial lag models have the same independent variables as shown in Table 1: number of FTZs, exports (million US$), number of Employees, number of Firms, and active acreage. Spatial regression analysis is conducted using GeoDa 1.14.

Geographically Weighted Regression Analysis.

After the spatial lag models, the same three regression models (one for each of the three dependent variables with the same six independent variables shown in Table 1) are developed using the geographically weighted regression (GWR) method. The rational for conducting GWR is that some relationships that are not significant on a global scale as shown in a spatial lag model could be significant on a local scale in the corresponding GWR model. In regular regression analysis, the relationships shown by the regression coefficients are fixed after the model is defined, that is, they are the same across the study area. By contrast, GWR shows and describes the spatial variations of regression coefficients and the spatial variations of relationships represented by them (Brunsdon, Fotheringham, & Charlton, 1996).

The general form of a GWR model is given as follows:

$$y_i = a_0(u_i, v_i) + \sum_k a_k(u_i, v_i)x_{ik} + \varepsilon_i \qquad (3)$$

where (u_i, v_i) are the coordinates of location i in space; $a_0(u_i, v_i)$ is the intercept term; $a_k(u_i, v_i)$ are the coefficients of independent variables x_{ik}; and ε_i is the error term. As shown in the equation, the regression coefficients are a function of locations. That is, each location has its own value of a regression coefficient. These coefficients are locally determined from neighbors of the location in question. The neighborhood is determined by a weight matrix (Brunsdon, Fotheringham, & Charlton, 1998; Fotheringham, Brunsdon, & Charlton, 1998). The traditional kernel weight matrix in GWR is based on the following formula:

$$W_{ij} = \begin{cases} 1 \; if \; d_{ij} \leq d \\ 0 \; if \; d_{ij} > d \end{cases} \quad i, j = 1, 2, \ldots, n \qquad (4)$$

where W_{ij} is the weight value between locations i and j separated by distance (d_{ij}) and d is a preset distance. Any location j with a distance from location i shorter than d is included as a neighbor of location i. A shortcoming of this weight matrix is the discontinuity of weight values. For this reason, Fotheringham, Charlton, and Brunsdon (1997) suggested that weight should be calculated as a continuous function of distance. In this study, weights are calculated using an exponential decay function of distance:

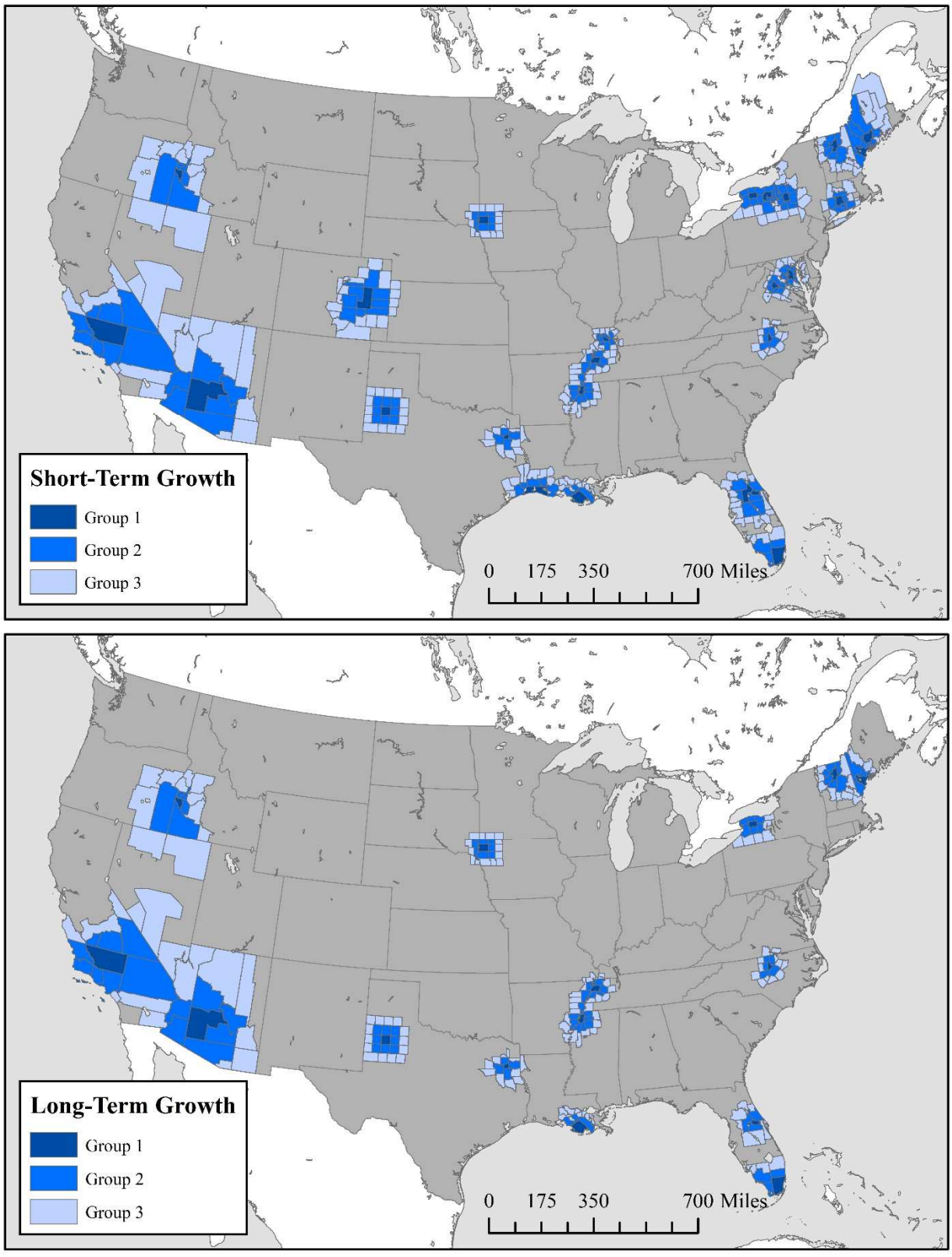
$$W_{ij} = exp\left(-\beta d_{ij}^2\right); \qquad i, j = 1, 2, \ldots, n \qquad (5)$$

where *exp* is the notation for exponential function; d_{ij}^2 is the squared distance between locations i and j; β is the decay parameter. As a location gets further away from the location in question, the weight declines accordingly. The GWR analysis is conducted with GWR4.

Temporal Analysis

The purpose of temporal analysis is to evaluate potential impact of FTZ on major economic factors in a county with an added FTZ and its surrounding counties. Temporal changes of four variables: median household income, unemployment rates, manufacturing firms, and manufacturing employment are analyzed using historical economic 5-year ACS data. Due to lack of data availability, this analysis only covers the period of 2009-2017. A subset of the counties in the U.S. are used and they are placed into three groups. Group 1 consists of the counties with an added FTZ, Group 2 contains the neighboring counties of an FTZ county based on the first-order queen adjacency, and Group 3 includes second-order adjacent counties (Figure 9).

Figure 9. Counties Included in the Temporal Analysis



Temporal analysis includes both short-term and long-term growth. Short-term growth analysis examines the difference between 1 year before and 1 year after the creation of an FTZ for the period of 2010 to 2015. Because the ACS does not gather the same amount of data for the four variables included in this analysis, the number of counties in each group varies between (Table 2). Long-term growth analysis examines the difference between 1 year before and 3 years after the creation of an FTZ for the period of 2010 and 2013. For both short-term and long-term analysis, percentage difference is used as the measure of changes between years.

Table 2. Number of Observations in Each County Group

Variables and County Groups	**Short-Term Analysis**	**Long-Term Analysis**
Median Household Income		
Group 1	25	15
Group 2	150	83
Group 3	264	145
Unemployment Rates		
Group 1	25	15
Group 2	150	83
Group 3	263	145
Manufacturing Firms		
Group 1	25	15
Group 2	147	83
Group 3	256	124
Manufacturing Employees		
Group 1	25	15
Group 2	146	83
Group 3	256	124

Once percentage change values were calculated and organized according to county groups, one-sample t-tests and Kruskal-Wallis tests were performed for each variable. One-sample t-tests are a tool used to determine if a sample mean is significantly different from a hypothesized value, in this case 0 (Rogerson, 2015). The following formula represents the one-sample t-test performed on normally distributed county groups:

$$t = \frac{\bar{x} - \mu}{s/\sqrt{n}} \qquad (6)$$

where $\bar{x}$ is the sample mean, μ is the hypothesized mean of the population (0 in this case), s is the sample standard deviation, and n is the number of observations in the sample.

The Kruskal-Wallis test is a form of analysis of variance (ANOVA) used to measure differences in means for data that may "deviate drastically from the assumptions" (Rogerson, 2015, p. 187). Kruskal-Wallis is often used to test differences between ordinal data but can also be used in tests analyzing proportions. Because a number of variables were not normally distributed, the Kruskal-Wallis tests was used to measure differences amongst county groups (Rogerson, 2015). For this reason, Kruskal-Wallis was used in this analysis as opposed to ANOVA. The following formula represents the Kruskal-Wallis performed in this analysis:

$$H = \left(\frac{12}{n(n+1)} \sum_{i=1}^{k} \frac{R_i^2}{n_i}\right) - 3(n+1) \qquad (7)$$

where R_i is the sum of percentages in group i, n_i is the total number of observations in group i, and $k - 1$ is the degrees of freedom within the model. Results from the Kruskal-Wallis test represent the significance of differences between county groups 1, 2, and 3.

Results

Spatial Analysis

Spatial Dependency Analysis

Spatial dependence (spatial autocorrelation) was analyzed using the Getis-Ord G_i statistic for three variables: median household income, unemployment rates, and number of manufacturing firms. Results for median household income show significant clustering of high values (hot spots) along the northeastern Atlantic coastline, southwestern Pacific coastline, throughout Alaska, urban Hawaii, northern Utah, northwestern Nevada, northern Colorado, and throughout Wyoming. Significant clustering of high income also occurred in major urban centers

throughout the US, many of which contain FTZs. Significant clustering of low median household income (cold spots) occurred in western New Mexico, throughout rural southeastern states, most of West Virginia, and along the Mexican border in Texas (Figure 10).

The clustering of high unemployment rates (hot spots) to some extent matched with the clustering of low median household income (cold spots), especially in the southeastern United States (Figure 10 and Figure 11). The cold spots (the clustering of low unemployment rates) were mainly located in the Great Plains and Rocky Mountain regions. Exceptions to the general pattern include high unemployment rates clustered along the central Pacific coast, eastern California, most of Arizona, rural Colorado, border of North and South Dakota, Great Lakes region of Michigan, and northern Alaska (Figure 11). There was no significant clustering of either high or low values of household income in those areas (Figure 10).

The clusters of the number of manufacturing firms (hot spots) were located in the southwestern US, northern Washington, urban centers in Texas, around Minneapolis, southern Lake Michigan region, souhtwestern Michigan, Cleveland/Pittsburgh region, northeastern Atlantic coast, portions of peninsular Florida. No significant cold spots were present (Figure 12). Significant hot spots of manufacturing firms correspond to the location of FTZs. The occurrence of significant spatial clustering of the three variables around major urban centers with FTZs warranted further investigation into a possible spatial dependence of economic development on FTZs.

Figure 10. Hot-Spot Results for Median Household Income

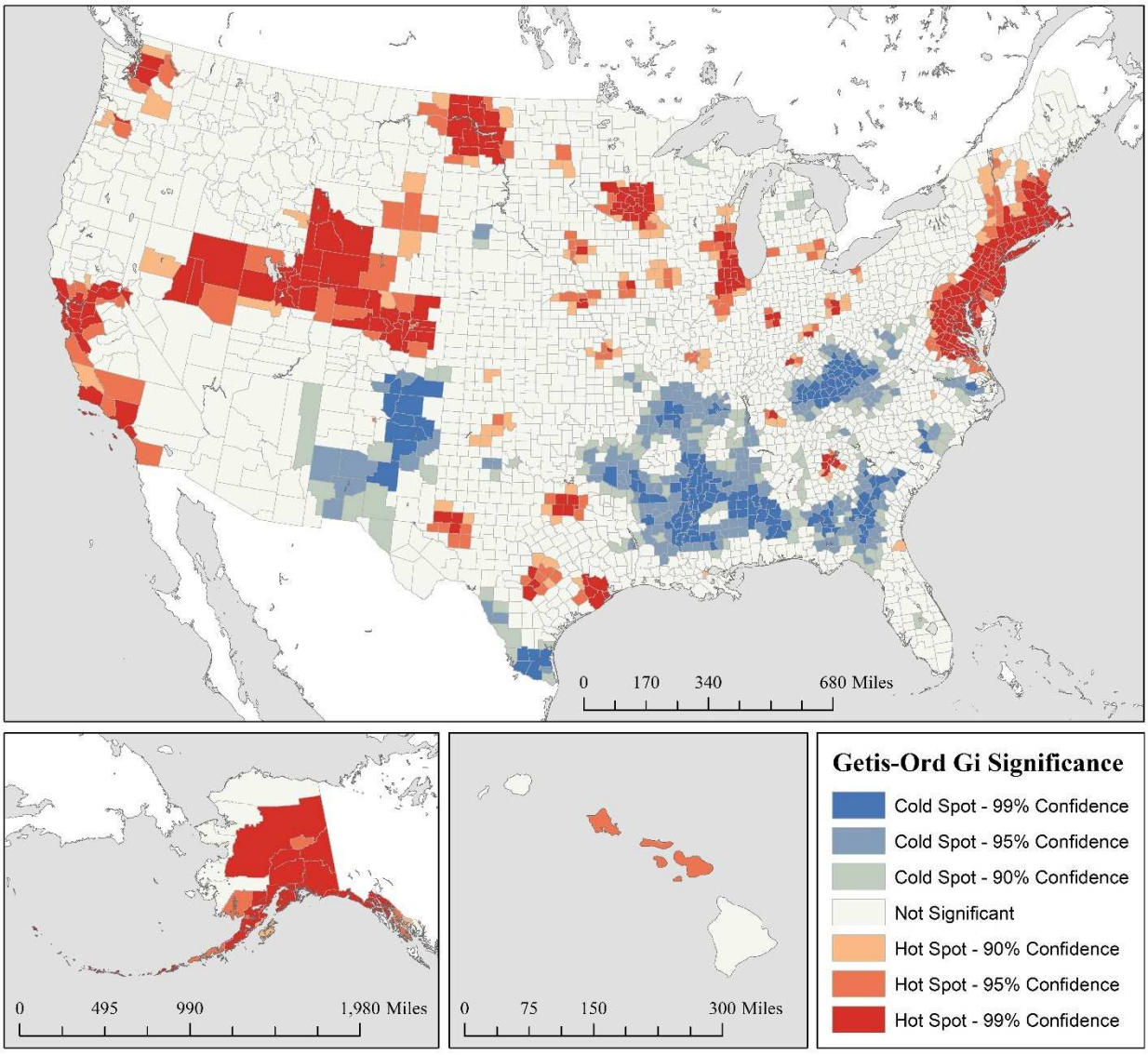


Figure 11. Hot-Spot Results for Unemployment Rates

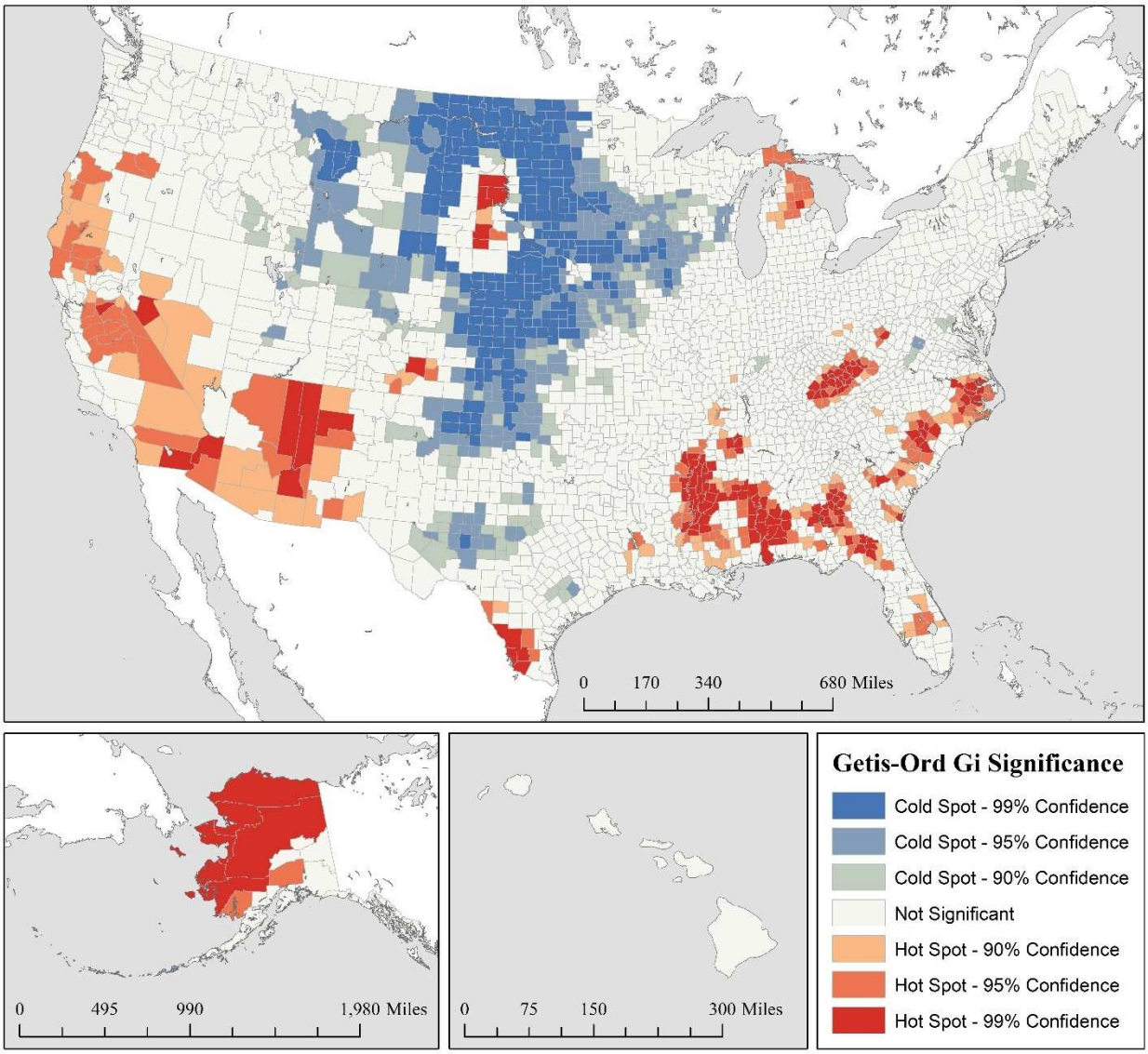
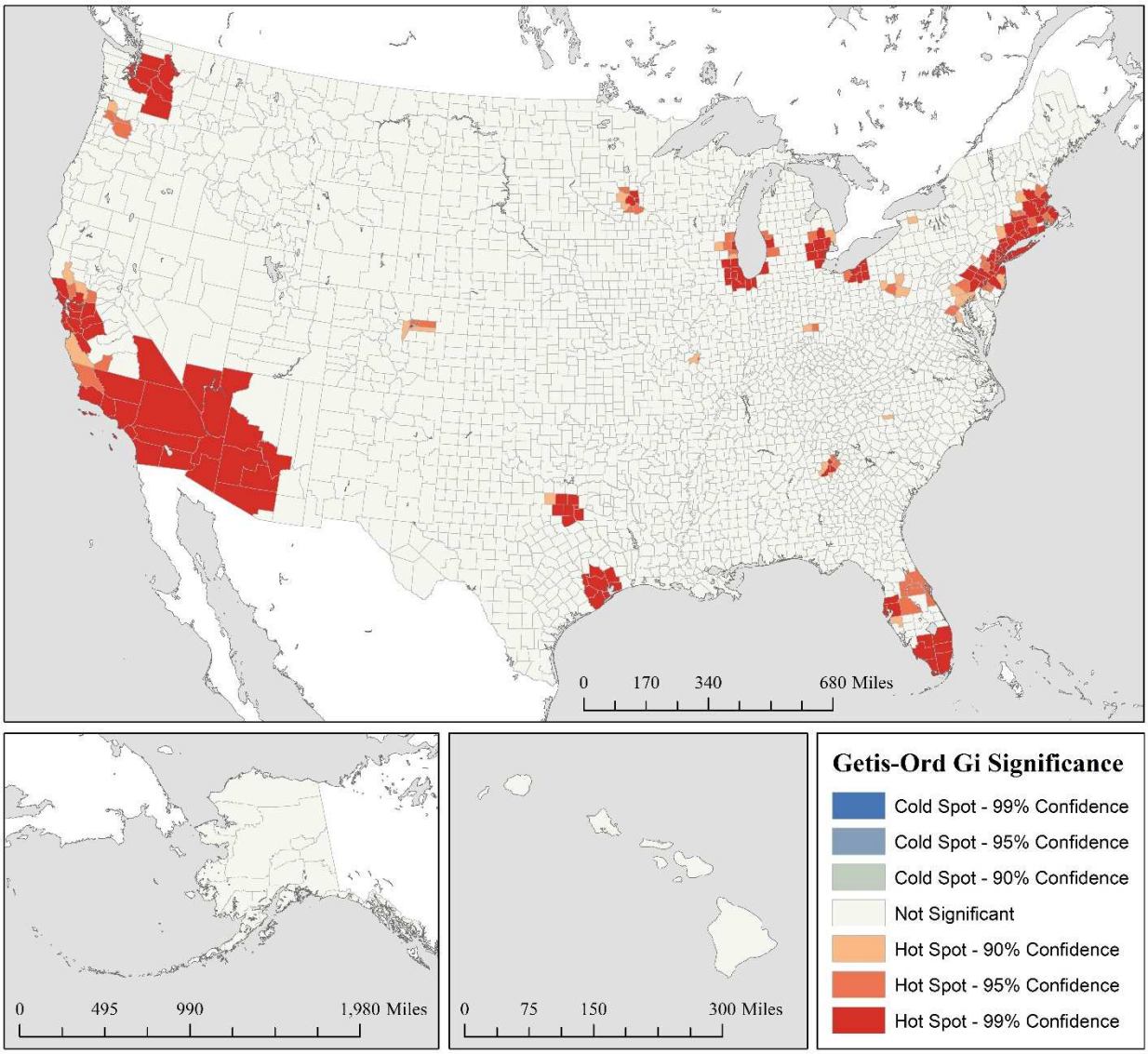


Figure 12. Hot-Spot Results for Manufacturing Firms



Spatial Regression Analysis

The regression model for median household income is shown in Equation (8).

$$\hat{y} = 0.77 + 1385.43x_1 + 50.74x_2 - 14.94x_3 \qquad (8)$$

where x_1 is the number of FTZs, x_2 is the number of FTZ firms, x_3 is the total active FTZ acreage, and $\hat{y}$ is the predicted value for median household income. The model explains 56% of the variation in the dependent variable (Table 2=3). According to this equation, when the number of FTZs in a county increase by 1, median household income increases by $1,385.43; when the number of FTZ firms increase by 1, median household income increases by $50.74. Interestingly, as active acreage increases by 1, median household income *decreases* by $14.94.

The regression model for unemployment rates has only one independent variable: number of FTZ firms as shown in Equation (9).

$$\hat{y} = 1.92 + 0.007x \quad (9)$$

where x is the number of FTZ firms, and $\hat{y}$ is the predicted value for unemployment rates. The model explains 47% of the variation in the dependent variable (Table 3). According to this model, when the number of FTZ firms in a county increase by 1000, unemployment rates are expected to *increase* by 7%.

The regression model for the number of manufacturing firms is given in Equation (10).

$$\hat{y} = 14.63 + 242.50x_1 - 0.0000001x_2 + 0.12x_3 + 7.56x_4 + 1.96x_5 \qquad (10)$$

where x_1 is the number of FTZs, x_2 is the total exports in million US$, x_3 is the number of FTZ employees, x_4 is the number of FTZ firms, x_5 is the total active FTZ acreage, and $\hat{y}$ is the predicted value for the number of manufacturing firms. The model explains 55% of the variation in the dependent variable (Table 3). According to this model, when the number of FTZs increases by 1, the number of manufacturing firms are expected to increase by about 243. When

total exports increase by $10 million, the county is expected to lose a manufacturing firm. When the number of FTZ employees increases by 100, the number of manufacturing firms is expected to increase by approximately 12. When the number of FTZ firms increases by 1, the number of manufacturing firms is expected to increase by about 8. Finally, when the total active acreage increases by 1, the number of manufacturing firms are expected to increase by 2. Results for these models show that when county adjacency weights are applied, median household income, unemployment rates, and the number of manufacturing firms are significantly dependent on FTZs at the county scale.

Table 3. Spatial Lag Results

Model	R^2	FTZ	EXP	EMP	FIR	ACR
MHI	0.56	1385.43*			50.74**	-14.94**
UNE	0.47				0.007*	
MAN	0.55	242.50***	-0.134***	0.12***	7.56***	1.96***

Note. Model terms are median household income (MHI), unemployment rates (UNE), manufacturing firms (MAN), number of foreign-trade zones (FTZ), exports (EXP), total employment (EMP), number of FTZ firms (FIR), and active acreage (ACR).

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.0001$.

Geographically Weighted Regression

Three GWR models were developed, one for each of the same three dependent variables with the same five independent variables shown in Table 1. The GWR model for median household income, explains 24% of the variation in the dependent variable for the whole US. However, results showed marked spatial variation (Table 4 and Figure 13). Local R-square values ranged from 0.0001 to 0.80. The highest local R-square values occurred in coastal Alaska, all of Hawaii, along the contiguous west coast region, and along the Mississippi and Ohio River

watersheds. The highest values of the coefficient for number of FTZs were largely relegated to Alaska, Virginia, North Carolina, and South Carolina, while negative values occurred across the Rocky Mountain states, along the Canadian border, and the southern half of California. The coefficient for FTZ exports showed the highest values in the New England states and negative values in several Rocky Mountain states and west coast Alaska. The highest values of the coefficient for FTZ employment occurred in the southeastern portion of Alaska, all of Hawaii, northern California, Oregon, Texas, western Oklahoma, northern Maine, and along the North Dakota Canadian border, while large swaths of the eastern U.S., most of Alaska, and a portion of northern Montana had negative values. The highest values of the coefficient for the number of FTZ firms were located in the Pacific Northwest and most of Alaska, while large portions of central and eastern U.S. had negative values. Finally, the highest values of the coefficient for active FTZ acreage were located primarily in west coast Alaska, the island of Oahu, and most of Maine, while negative values occurred across most of the continental U.S.

The GWR model for unemployment rates explains 32% of the variation in the dependent variable for the US as a whole, but shows great spatial variation over the country. (Table 4 and Figure 14). Local R-Square values range from 0.00008 to 0.60. The highest local R-square values occurred across most of Alaska and Nevada, throughout the eastern half of the Great Plains region, and along the western half of the Great Lakes region. The highest values of the coefficient for the number of FTZs occurred in the southwestern portion of the contiguous U.S., southeastern Alaska, and the Big Island of Hawaii, while negative values occurred across most of the southeast, parts of northwestern Canadian border, and west coast Alaska. The coefficient for FTZ exports had the highest values along the west coast of Alaska and negative values occurred in several states in the Pacific Northwest, Arizona, Michigan, and the mid-Atlantic states. The

highest values of the coefficient for FTZ employment occurred along the Montana Canadian border and across most of Alaska, while negative values occurred in southeastern Alaska, coastal Washington, throughout the southwest and southcentral U.S., parts of the great plains, and along the North Dakota-Canadian border. The highest values of the coefficient for the number of FTZ firms occurred in the Dakotas and across several Atlantic Northeast states, while negative values occurred in various locations across the western half of the contiguous U.S. and all of Alaska and Hawaii. Finally, the highest values of the coefficient for active FTZ acreage occurred along the northcentral Canadian border and western Hawaii, while negative values occurred around the California, Nevada, and Arizona borders, western Texas, and large swaths of eastern states.

The GWR model for manufacturing firms in a county explains 69% of the variation in the dependent variable for the US as a whole, but exhibits great spatial variation in terms of model strength and relationships between the dependent variable with each independent variable (Table 4 and Figure 15). Local R-square values range from 0.124 to 0.986. The highest local R-square values occurred throughout Alaska, western Hawaii, California, Arizona, New Mexico, Nevada, Utah, Oregon, Washington, southern Texas, and peninsular Florida. The highest values of the coefficient for number of FTZs occurred in Nevada, Utah, and along the eastern seaboard, while negative values occurred in northern Minnesota, southern Texas, part of southern Alaska, and western Hawaii. The values of the coefficient for FTZ exports were higher in Maine and negative values occurred across major portions of the continental U.S and Alaska. The highest values of the coefficient for FTZ employment occurred in northern Wyoming, southern Montana, eastern New Mexico, western Texas, and western Hawaii, while negative values were found in New England, northern portion of the mid-Atlantic region and in Central Florida. The highest values of the coefficient for FTZ firms occurred in southeastern coastal Alaska and the Pacific

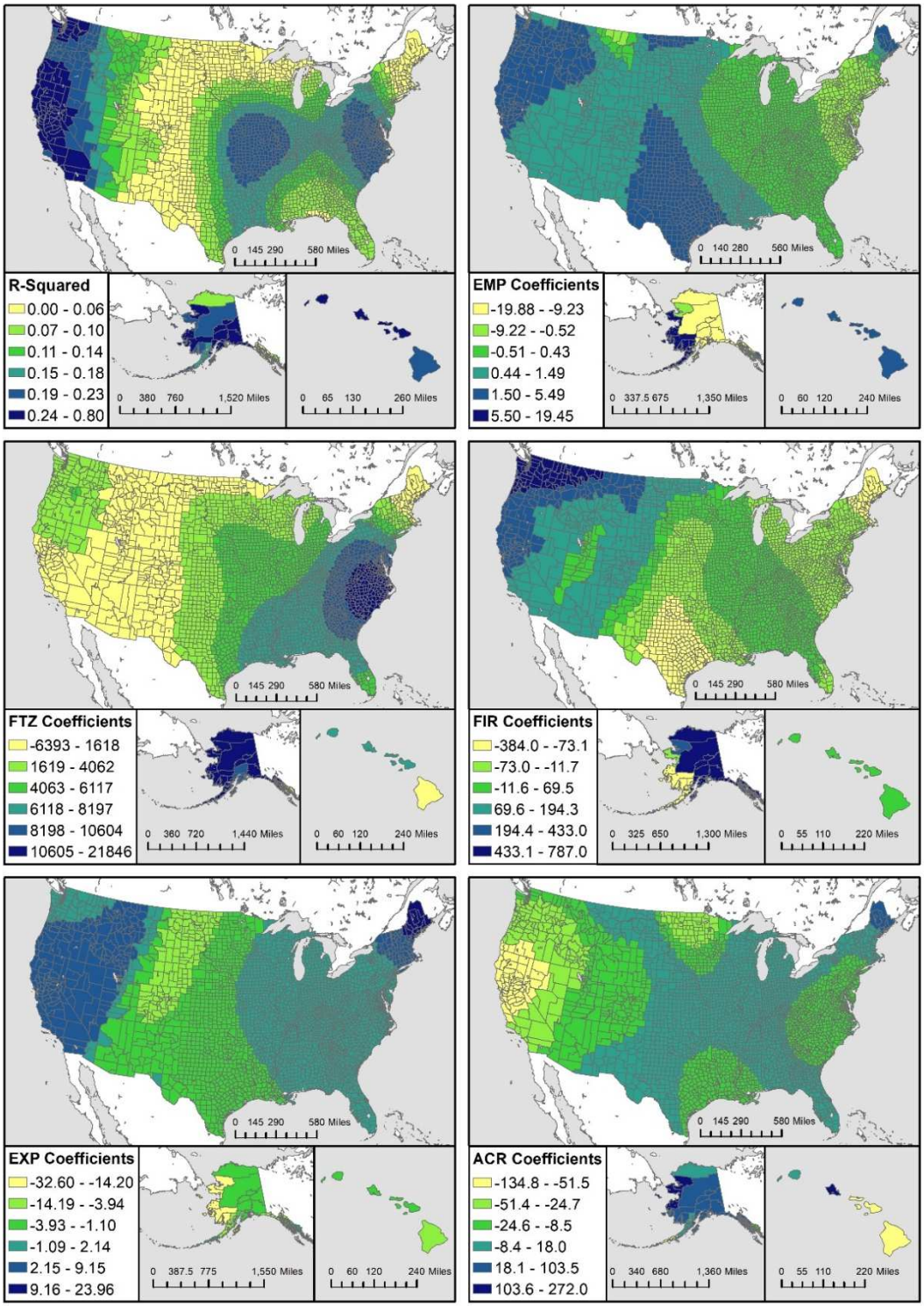
Northwest, while negative values were located in the Maine, west coast Alaska, and the Big Island of Hawaii. The highest values of the coefficient for active FTZ acreage occurred in Michigan, Wisconsin, Iowa, and northern Illinois, while negative values could be found in the Northwestern and across much of the eastern portion of the continental U.S.

Table 4. GWR Results

GWR Models	R^2	Local R^2 Low/High	Coefficient Means	Coefficient Low/High
Median Household Income	0.2426	0.0001/0.8030		
FTZ			5542.34	-6393.34/21846.3
EXP			-0.37453	-32.6033/23.9624
EMP			0.38293	-19.8793/19.4531
FIR			19.3372	-383.976/786.988
ACR			-9.51901	-134.757/271.954
Unemployment Rates	0.3155	0.00008/0.5985		
FTZ			-0.26163	-16.1848/2.74407
EXP			0.00003	-0.00456/0.00835
EMP			-0.00001	-0.00168/0.00538
FIR			0.02173	-0.12961/0.10180
ACR			0.00253	-0.07190/0.08301
Manufacturing Firms	0.6932	0.1236/0.9858		
FTZ			262.705	-122.473/740.453
EXP			-0.05513	-1.00853/4.82069
EMP			0.07522	-0.11835/0.53595
FIR			23.3694	-21.4026/99.1042
ACR			1.37817	-2.00703/10.8119

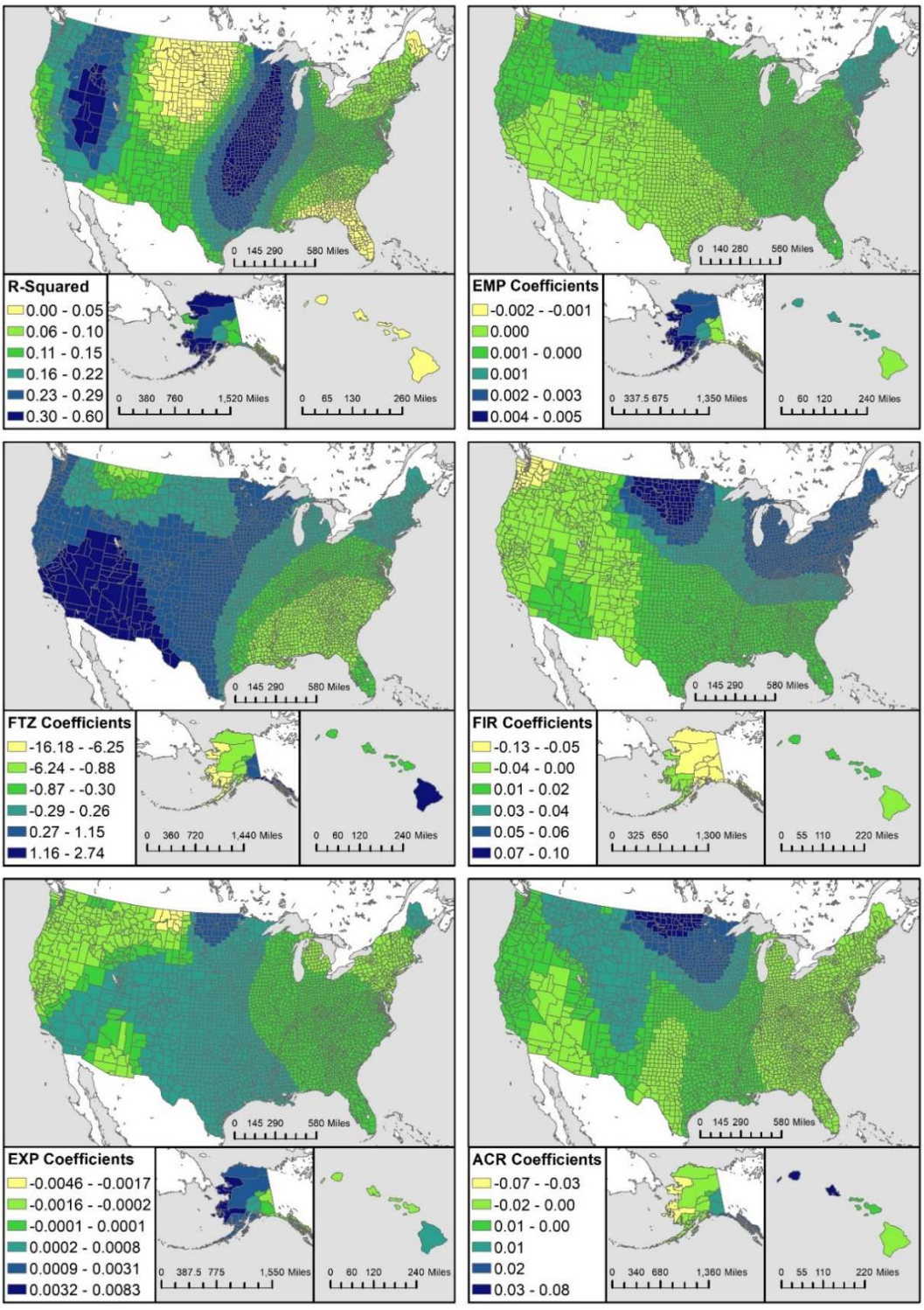
Note. Model terms are geographically weighted regression (GWR), number of foreign-trade zones (FTZ), exports (EXP), total employment (EMP), number of FTZ firms (FIR), and active acreage (ACR).

Figure 13. GWR Results for Median Household Income



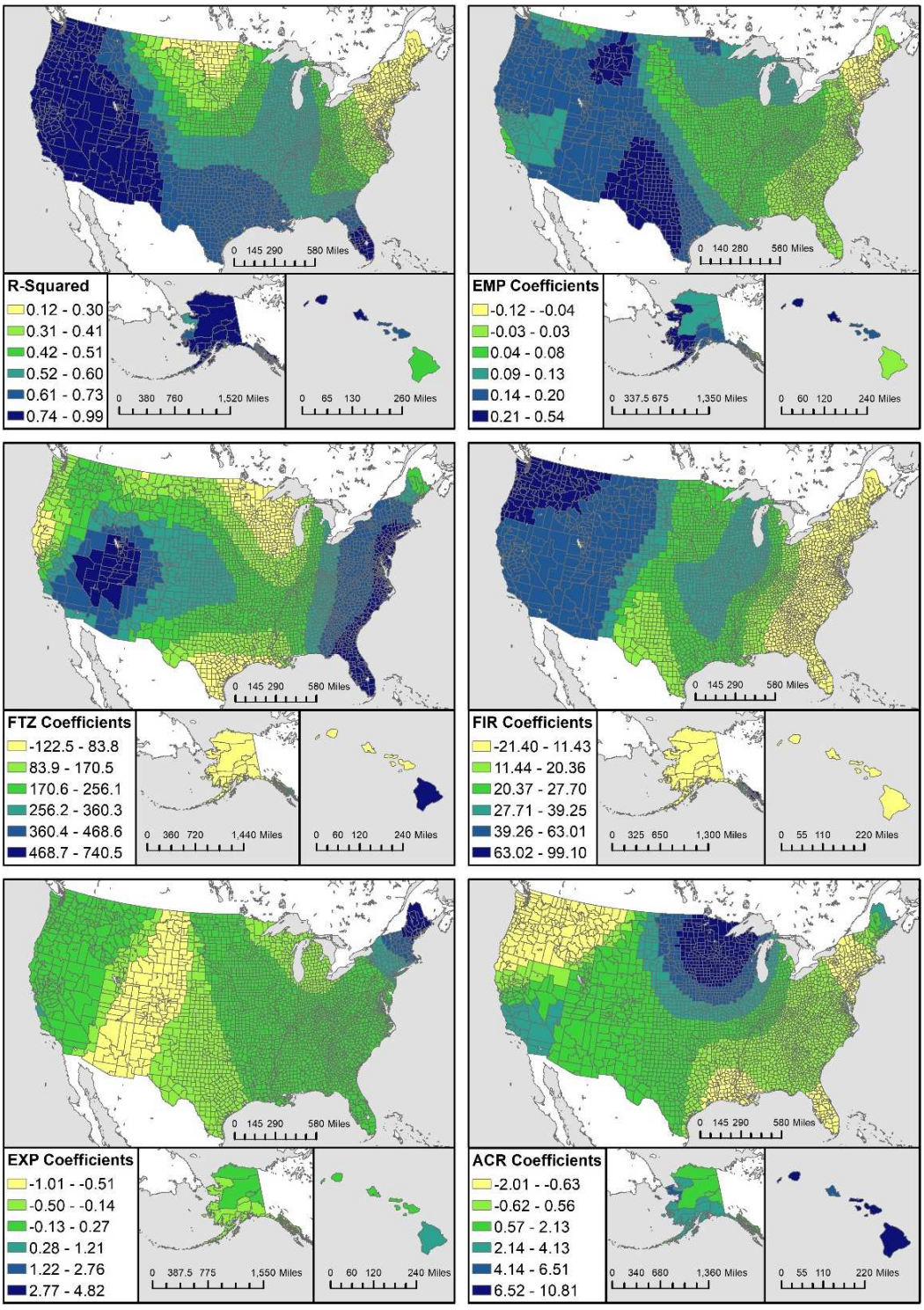
Note. Model terms are number of foreign-trade zones (FTZ), exports (EXP), total employment (EMP), number of FTZ firms (FIR), and active acreage (ACR).

Figure 14. GWR Results for Unemployment Rates



Note. Model terms are number of foreign-trade zones (FTZ), exports (EXP), total employment (EMP), number of FTZ firms (FIR), and active acreage (ACR).

Figure 15. GWR Results for Manufacturing Firms



Note. Model terms are number of foreign-trade zones (FTZ), exports (EXP), total employment (EMP), number of FTZ firms (FIR), and active acreage (ACR).

Temporal Analysis

For temporal analysis, counties were divided into three separate groups based on FTZ location: counties that added an FTZ are grouped as Group 1, first-order contiguous counties as Group 2, and second-order contiguous counties as Group 3; and percentage changes before and after the addition of an FTZ were tabulated to analyze the potential impact of FTZs on economic growth patterns. Short-term growth percentages (1 year before, 1 year after) and long-term growth percentages (1 year before, 3 years after) were calculated using the Census Bureau's ACS data. Due to the ACS data availability or lack thereof, the short-term analysis covers the period of 2010 through 2015 (six years) and the long-term analysis includes the years 2010 through 2013 (four years).

Mean short-term percentage growth rates for median household income were fairly consistent across each county group, with a 2.4% growth rate for Group 1, a 2.6% growth rate for Group 2, and a 2.9% growth rate for Group 3 (Figure 16). Group 1 median household income short-term growth rates were higher in 2010; however, those values were lower than the other two groups in 2011 and 2012. Group 1 values were higher than the other groups in 2013 and 2014, seeing positive change in each group. By 2015, Group 1 median household income short-term growth rates were lower than Groups 1 and 2 (Table 5 and Figure 17). Mean short-term growth rates for unemployment were different across county groups, with a 4.7% decline in Group 1, a 1.7% increase in Group 2, and a 0.4% decline in Group 3 (Figure 16). Group 1 counties had lower unemployment growth rates than the other two groups in 2010 and 2011, but surpassed Group 3 values in 2012. In 2013, Group 1 unemployment growth rates were lower than the other two groups and remained lower until 2015 (Table 5 and Figure 17).

Mean short-term growth rates for the number of manufacturing firms were higher in Group 1 than surrounding counties, with a 3.4% increase in Group 1, a 1.3% decline in Group 2, and a 1.9% increase in Group 3 (Figure 16). Group 1 short-term manufacturing firm growth rates were higher than the other two groups every year except for 2010, 2011, and 2014 (Table 5 and Figure 17). Mean short-term growth rates for manufacturing employment were slightly higher than neighboring counties, with a 1.1% increase in Group 1, a 0.9% increase in Group 2, and a 0.5% decline in Group 3 (Figure 16). Group 1 values were lower in 2010 than the other groups but surpassed Group 2 in 2011 by 0.1%. In 2012, Group 1 values were higher than Group 2 but lower than Group 3. In 2013, Group 1 values were lower than Group 2 but higher than Group 3. By 2014, Group 1 values were higher than the other two groups but dropped below Groups 2 and 3 in 2015 (Table 5 and Figure 17).

Mean long-term percentage growth rates for median household income were fairly consistent across each county group, with a 5.1% growth rate for Group 1, a 4.5% growth rate for Group 2, and a 5.1% growth rate for Group 3 (Figure 16). Group 1 long-term growth rates were lower than the other two groups in 2010 and 2011, but surpassed Groups 2 and 3 in 2012. By 2013, Group 1 growth rates were 1.8% higher than Group 3 (Table 6 and Figure 17). Mean long-term growth rates for unemployment were different across county groups, with a 2.0% decline in Group 1, an 11.7% increase in Group 2, and a 5.1% increase in Group 3 (Figure 16). Long-term unemployment rates increased for all three county groups in 2010 but long-term growth rates were lower in Group 1 than the other groups. By 2011, long-term growth rates declined in Groups 2 and 3, but increased in Group 1. In 2012 and 2013, unemployment declined in all three groups but Group 1 counties declined at a faster rate (Table 6 and Figure 17).

Mean long-term growth rates for the number of manufacturing firms were higher in Group 1 than surrounding counties, with a 0.8% increase in Group 1, a 4.1% decline in Group 2, and a 1.9% decline in Group 3 (Figure 16). In 2010 and 2011, Group 1 long-term growth rates fell in between Groups 2 and 3. However, Groups 2 and 3 declined in manufacturing in 2012 and 2013. In both years, Group 1 increased in long-term manufacturing firm growth rates (Table 6 and Figure 17). Mean long-term growth rates for manufacturing employment were higher than neighboring counties, with a 7.5% increase in Group 1, a 2.6% decline in Group 2, and a 1.7% decline in Group 3 (Figure 16). In 2010, all three county groups were close in long-term percentage growth rates and declining. By 2011, Group 1 had a high of 24.9% long-term growth while Group 2 declined, and Group 2 increased at rate of 13.3%. In 2012, Group 1 was below Group 3 and above Group 2. By 2013, Group 2 had its only positive percentage growth value; Group 3 dropped to a negative growth rate; Group 1 remained in the middle of the other two groups with a long-term growth rate of 6.9% (Table 6 and Figure 17).

Table 5. Short-Term Mean Percentage Changes

	MHI			UNE			MAN			EMP		
Group	**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**
2010	4.3	6.6	5.8	13.1	26.2	30.0	-4.2	-5.0	2.3	-7.2	2.7	-1.7
2011	0.8	0.4	1.9	23.2	37.9	23.7	2.5	-0.1	7.9	-4.6	-4.7	4.8
2012	-0.3	-0.2	-0.2	9.8	15.4	9.0	1.5	-3.4	-0.6	1.3	-5.4	7.8
2013	4.0	2.7	2.9	-7.1	2.3	0.3	12.0	-5.7	1.8	-1.3	21.8	-2.2
2014	3.4	0.7	1.6	-8.8	-12.9	-10.2	-1.5	6.2	1.8	8.0	5.2	-4.2
2015	0.9	2.6	3.2	-28.0	-15.7	-15.9	13.9	1.7	5.3	-0.8	0.9	3.6
Mean	2.4	2.6	2.9	-4.7	1.7	-0.4	3.4	-1.3	1.9	1.1	0.9	-0.5

Note. Model terms are median household income (MHI), unemployment rate (UNE), manufacturing firms (MAN), and manufacturing employment (EMP).

Table 6. Long-Term Mean Percentage Changes

	MHI			UNE			MAN			EMP		
Group	**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**
2010	4.7	8.6	8.6	25.1	62.9	54.6	-1.8	-4.1	4.9	-0.8	-0.7	-1.4
2011	0.6	0.4	2.2	30.9	43.4	24.2	4.4	2.0	9.3	24.9	-0.7	13.3
2012	2.8	0.5	1.4	-10.7	-1.6	-6.7	3.8	-0.2	-4.0	9.1	-0.5	13.4
2013	8.4	5.2	6.6	-16.3	-9.3	-15.4	10.7	-9.0	-1.7	6.9	14.2	-0.9
Mean	5.1	4.5	5.1	-2.0	11.7	5.1	0.8	-4.1	-1.9	7.5	-2.6	-1.7

Note. Model terms are median household income (MHI), unemployment rate (UNE), manufacturing firms (MAN), and manufacturing employment (EMP).

Figure 16. Short-Term and Long-Term Mean Growth Rates

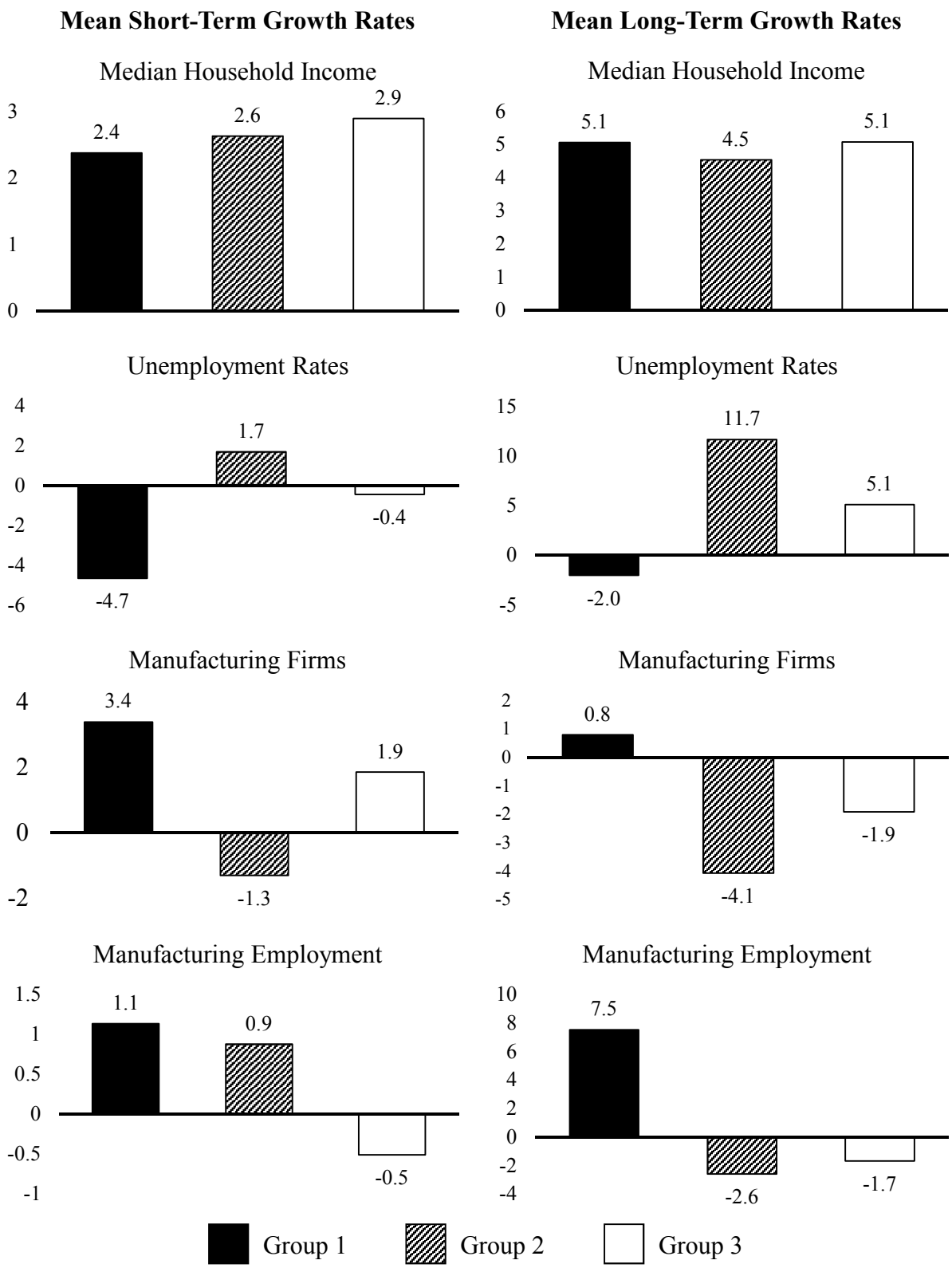
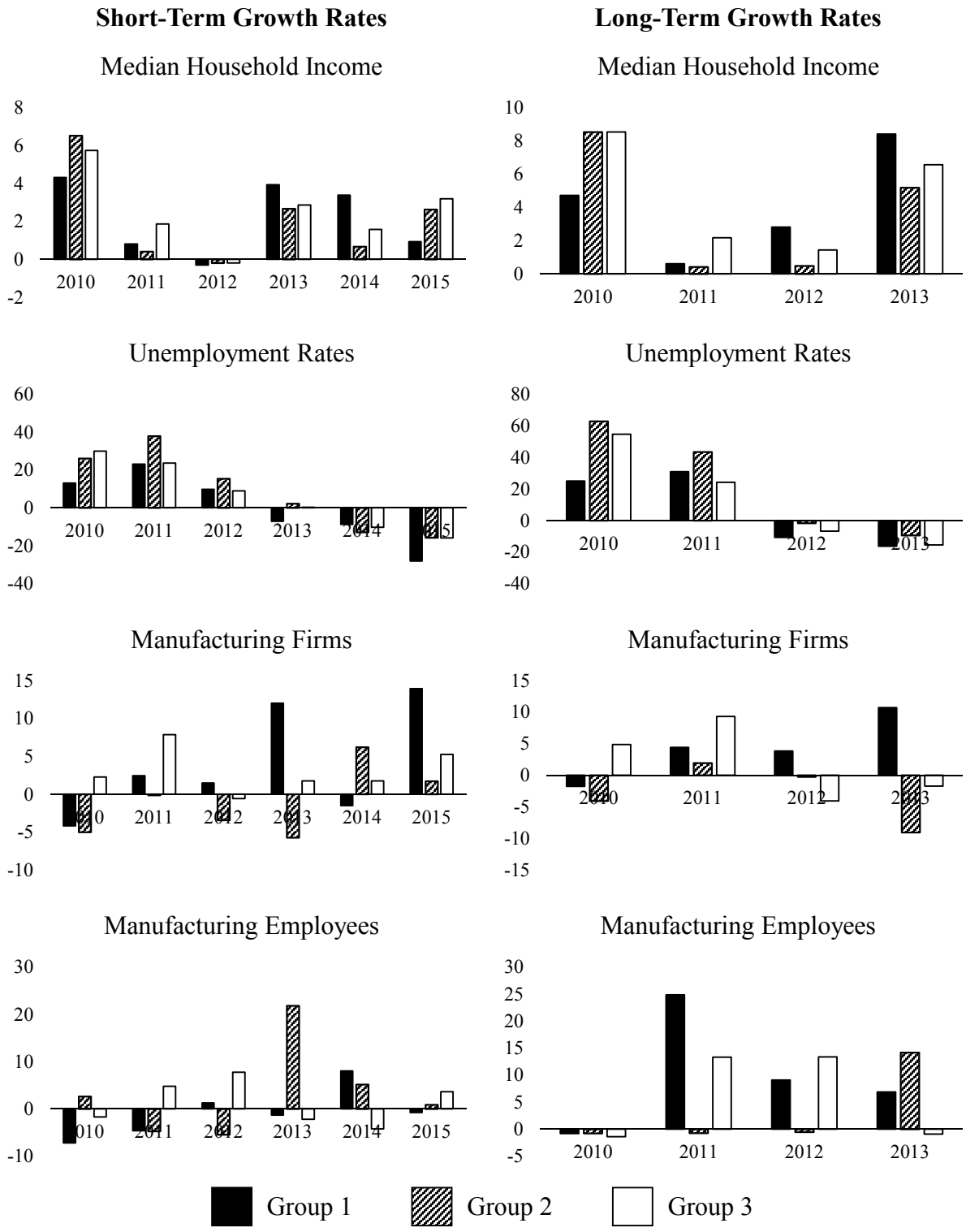


Figure 17. Yearly Short-Term and Long-Term Growth Rates



After tabling and charting yearly and mean percentage changes in dependent variables, once-sample t-tests were performed on each variable and county group. Following the t-tests, Kruskal-Wallis tests were performed for each variable to analyze significant differences between short-term and long-term percentage changes among county groups. Mean short-term percentage growth rates for median household income were significantly different from zero across each county group. All other short-term variables were not significantly different from zero. Mean long-term percentage growth rates for median household income were significantly different from zero for each county group. Group 2 long-term percentage changes in unemployment and manufacturing firms were significantly different form zero but the other two country groups were not. Group 1 long-term percentage changes in manufacturing employment were significantly different from zero but the other two groups were not. Of the eight dependent variables analyzed using the Kruskal-Wallis test, only one resulted in a significant p-value. Long-term percentage growth rates in manufacturing employment were significantly higher in FTZ-counties (Group 1) than surrounding counties (Table 7).

Table 7. One-Sample t-Test and Kruskal-Wallis Results for the Temporal Analysis

Variables	Group 1 Mean	Group 2 Mean	Group 3 Mean	Kruskal-Wallis H
MHI Short	**2.38****	**2.63*****	**2.89*****	1.257
UNE Short	-4.66	1.70	-0.44	1.288
MAN Short	3.39	-1.30	1.86	3.995
EMP Short	1.14	0.88	-0.51	0.667
MHI Long	**5.05*****	**4.53*****	**5.08*****	1.139
UNE Long	-2.03	**11.66***	5.11	1.334
MAN Long	0.78	**-4.07****	-1.92	1.941
EMP Long	**7.54***	-2.60	-1.70	**7.338***

Note. Model terms are median household income (MHI), unemployment rates (UNE), manufacturing firms (MAN), and manufacturing employment (EMP).

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.0001$.

Discussion

Spatial Analysis

Analyses performed in this paper show that significant spatial dependency as measured by spatial autocorrelation exists between contiguous counties in median household income, unemployment rates, and number of manufacturing firms. Due to the level of spatial autocorrelation within each dependent variable, the same weights used in the Getis-Ord G_i were applied to three spatial lag models. Prior to running the spatial lag models, a Pearson's multicollinearity matrix revealed collinearity between FTZ employment and merchandise sold from FTZs. Since the purpose of this study is to evaluate the impact on FTZs on surrounding populations, merchandise sold from FTZs were removed from the analysis and FTZ employment remained in the original spatial lag models. Each spatial lag model analyzed the spatial dependence of three economic measurements on the number of foreign-trade zones (FTZs), number of exports sold from FTZs in million U.S. dollars, number of FTZ employees, number of FTZ firms, and active acreage of FTZs in a county. Independent variables were removed from each model until the best-fit model remained. For this reason, each spatial lag model had different independent variables in the final models.

The purpose of performing Getis-Ord G_i spatial autocorrelation and spatial lag models was to analyze the spatial dependence of development patterns on the location of FTZs across the United States. Results reveal that median household income is significantly dependent on the number of FTZs, number of FTZ firms, and active FTZ acreage. Similar results occurred when analyzing the spatial dependence of unemployment rates on the number of FTZ firms by county. However, the impact of FTZ firms on unemployment rates were contrary to the hypothesis that an increase in FTZ firms would result in a reduction of unemployment rates. These results

revealed that an increase in FTZ firms resulted in an increase in unemployment rates. While these results were anomalous, the impact was minor and should not be considered a major factor in unemployment rates. Spatial lag results for manufacturing firms had the most significant values of all three models. According to these results, the number of manufacturing firms are significantly dependent on five of the original independent variables. These results confirm conclusions made by Lane (2020) specifically focusing on the Southeastern U.S.

Because significance levels between dependent and independent variables often vary across regions, geographically weighted regression (GWR) was performed to evaluate the possibility of spatial non-stationarity within these variables. All five of the original variables included in the spatial lag models were analyzed and resulted in significant findings. However, each GWR model revealed major differences across space. The significance between median household income, manufacturing firms, and FTZs was stronger in coastal regions and areas near major river systems. The spatial dependence of unemployment rates on FTZs was significant in the Rocky Mountain region, contrary to results from the other two GWR models. However, there were significant results around the Mississippi River/Ohio River watersheds and Great Lakes region much like results for median household income and manufacturing firms. Similar to spatial lag model results, all three GWR models resulted in a mean coefficient estimate of 0 (no impact on dependent variables) for number of exports from FTZs. While other studies have found that the creation of FTZs has led to a decline in exports (Mathur & Mathur, 1997; Seyoum, 2017; Seyoum & Ramirez, 2012), results from this study reveal that FTZ exports have no impact on median household income.

Interestingly, across several counties in the Rocky Mountain West, Pacific Coast and New England, an increase in FTZs led to a decline in incomes. This occurred for several reasons,

one of which is the limited number of FTZs in these regions. In addition, many FTZs in these regions are located in counties with lower incomes than surrounding counties. According to Carruthers and Vias (2005), urban centers in the western U.S. saw an increase in suburban sprawl since 1982. Population moved to the suburban periphery regions around major urban centers and incomes rose with the shifting population. This may have had an impact on the coefficient estimates for the GWR in this region. The local impact of FTZ employment on incomes resulted in some deviant cases as well. While the incomes of a majority of counties were positively impacted by FTZ employment, portions of eastern Alaska, Washington, Montana, and much of the eastern U.S. were negatively impacted. These same regions in Alaska have high income and close to zero FTZ employment and many counties with higher FTZ employment in the eastern U.S. have lower incomes than adjacent counties. FTZ employment in the Montana is low across the state, even with spatial variation in incomes. In addition, several counties in Washington have low FTZ employment but high incomes, hence the negative relationship between these variables.

Originally, FTZs were expected to negatively impact unemployment rates. However, GWR results suggest that some regions have higher unemployment rates near FTZs. Areas impacted the most were the Southwest, Pacific Coast, Rocky Mountain West, and much of the Great Plains. In many of these areas, FTZs were located in urban counties with higher unemployment rates than surrounding counties. As described earlier, suburban sprawl in the 1980s-90s may have led to the decline in incomes and employment in these urban centers (Carruthers & Vias, 2005). While the impact of FTZs on unemployment rates were significant in many areas, other independent variables had minimal impact on unemployment rates.

Of all GWR models, FTZs had the greatest impact on the number of manufacturing firms in a county. However, this impact varied greatly across space. Though minor, FTZs had some negative effects on manufacturing along the central Pacific coast, Minnesota, Wisconsin, northern Illinois, and southern Texas. The negative impacts on counties near Mexico and Canada may be due to the large number of FTZs located along these to borders. According to Seyoum and Ramirez (2012), trade agreements such as the North American Free Trade Agreement (NAFTA) led many FTZ firms to use foreign components. This has had an impact on the location of many of these FTZs along the Mexican and Canadian border. While FTZs may locate near these two countries, results from this study suggest that FTZs have not led to an increase in manufacturing in southern Texas, northern Minnesota, most of Wisconsin, and northern Illinois. Furthermore, FTZs along the central Pacific Coast are located in counties with few manufacturing firms and employ a relatively small number of people, hence a slightly negative impact on the number of manufacturing firms.

While the number of FTZ firms had a major positive impact on manufacturing firms across the U.S., they had a negative impact in New England. This occurred because most counties in this region have a relatively small number of FTZ firms, yet many have a large number of manufacturing firms. Additionally, most of the manufacturing occurs along the coast but there are several FTZ firms located along the Canadian border. As stated earlier, NAFTA has had an impact on the location of some of these FTZs (Seyoum & Ramirez, 2012). While some deviant cases occurred across this model, results were largely positive, which may contradict findings from previous studies (e.g., Bolle, 1999). However, findings from this model should not be misinterpreted as a cause-and-effect relationship between these variables.

The regional spatial variation within these GWR models provided evidence that GWR was a better model for explaining the spatial dependence of economic development patterns on FTZs at the county scale. These results provide evidence that spatial spillover has occurred in counties with FTZs and neighboring contiguous counties. While this relationship does not prove causality between FTZs and spatial development patterns, it provides an interesting evaluation of the link between development patterns and FTZ location. According to Nunn, Parsons, and Shambaugh (2018), spatial inequality has subsisted since the end of the recent recession in 2009. Major metropolitan areas across the US, especially coastal urban centers, have rebounded while the rest of the country has continued to struggle. Place-based economic policies, such as FTZs, may be exacerbating spatial inequality that already exists, especially if they are placed in areas with higher economic output.

Spatial regression results in this chapter show corresponding locations of economic development and FTZs. More importantly, less developed areas are not benefiting from place-based economic policies like FTZs. Counties with, or neighboring, FTZs have statistically higher median household incomes and number of manufacturing firms. According to Head, Ries, and Swenson (1999), FTZs are effective at attracting foreign direct investment. This may have an adverse effect on rural counties lacking access to FTZs and limit their ability to attract capital. The link between spatial inequality and the location of FTZs may happen for one of two reasons: FTZs promote economic development and/or economic development attracts the creation of FTZs. Under both circumstances, FTZs are an integral part of uneven development and spatial inequality.

Further problems exist when locating FTZ general purpose zones and granting FTZ subzone status to a firm. General purpose zones are created in areas within sixty miles of a port

and in high-density industrial development (15 C.F.R. § 400.21, 2012); therefore, these zones will not be placed in impoverished rural areas. Firms that wish to benefit from a general-purpose zone are encouraged to relocate into these zones to benefit from inverse tariffs. This further exacerbates employment prospects in areas without a general-purpose zone. Subzones can be granted to firms not located near subzones without having to move operations (Kanellis, 1995). While a subzone can be beneficial to industrial firms located in impoverished areas, firms themselves are not attracted to rural areas due to recent trends in industrial agglomeration (Rodríguez-Pose & Storper, 2019). The growth of FTZs may be a catalyst for increasing spatial inequality between urban metropolitan areas and poverty-stricken rural regions.

Temporal Analysis

In order to better understand the impact that FTZs have on economic development, short-term and long-term growth impacts between 2009 and 2016 were evaluated. If FTZs actually promote local economic development, then a pattern should occur where group 1 counties would have noticeably higher growth rates than surrounding counties. Results from this portion of the study indicate that FTZs may not have the positive affect on local development patterns as originally proposed by the Foreign-Trade Zone Board. Short-term and long-term impacts were highly dependent on the year an FTZ was added to a county, and mean growth rates varied across each variable.

Specifically, short-term growth rates in median household income were higher in counties adding FTZs in 2010 than all other years. These growth rates dramatically declined in 2011 and 2012 with a rebound in 2013, only to decline the following two years. Irregular growth rates also occurred between counties. Counties adding FTZs in 2013 and 2014 performed better in the short-term than all other years. Such irregularities are the reflection of a lack of any real

impact from FTZs on income and the result of economic developments across other sectors. Mean values reflect these irregularities and indicate that FTZs do not affect incomes on the county scale. While t-tests confirm significant growth incomes across all counties observed, Kruskal-Wallis results indicate no significant differences between each county group. In other words, between 2010 and 2015, FTZs had no observable impact on median household income.

Yearly short-term changes in unemployment rates revealed an interesting trend: as time increased, FTZs had a more observable impact on county unemployment rates. In all counties observed, unemployment improved each year, indicating improved economic conditions throughout the U.S. In every year included in the short-term analysis except for 2014, unemployment rates performed better than surrounding counties. This resulted in a 4.7% decline in unemployment compared to a 1.7% increase in neighboring counties and a 0.4% decline in Group 3 counties. Mean values in short-term growth rates indicate that FTZs may have a mild impact on unemployment rates, but not significant. Results from the one-sample t-tests indicate no significant change from zero and the Kruskal-Wallis test indicates no significant difference between county groups. However, this does not mean that FTZs had no short-term impact on Group 1 counties. As stated previously, a mild decline in unemployment occurred in FTZ-counties while surrounding counties had an increase in unemployment. This may be due in part to a changing job market: as firms are attracted to FTZ benefits in Group 1 counties and other firms agglomerate near FTZ-firms, unemployment increases in neighboring counties due to an outmigration of businesses.

A similar trend occurred in short-term manufacturing firm growth rates: a general increase in manufacturing firms occurred between 2010 and 2015. Unfortunately, this trend was not observable in every county group. Group 1 counties declined in manufacturing firms in 2010

but increased in every other year except for 2014. This reflects changes across the national economy after the 2008-2009 recession and differences across the economic landscape. The massive increase in short-term manufacturing firm growth rates in 2013 and 2015 had a major impact on the observed mean values. According to the one-sample t-test results, each county group was not significantly different from zero. However, an observable difference in short-term manufacturing firm growth was present between each group, with a 3.4% increase in counties adding an FTZ, a 1.3% decline in neighboring counties, and a 1.9% increase in Group 3 counties. However, Kruskal-Wallis test results indicate no significant differences between these counties. Kruskal-Wallis results in tandem with observable differences between county groups reveal that FTZs may have a mild impact on the number of manufacturing firms in the short-term but other factors may have more of an effect on this variable. These mean values also indicate possible migration of manufacturing firms from surrounding counties into FTZ-counties and reflect a similar trend observed for short-term unemployment growth rates.

Short-term growth rates in manufacturing employment varied dramatically by year and no discernible trend occurred. Each year differed greatly with no clear county group leader. Mean short-term growth in manufacturing employment indicates no real differences between county groups. However, FTZ-counties had a slightly higher growth rate than surrounding counties. This was reflected in both the t-tests and Kruskal-Wallis results. Average growth rates were small enough that they were not significantly difference from zero and county groups were not significantly different from each other. This may be due in part to the amount of time needed to hire new employees in manufacturing firms after relocation. Once a firm relocates to a new location, facilities need to be constructed, which may take years before these facilities are open for business.

Long-term growth rates in median household incomes were similar to short-term growth rates: each county group growth rate was approximately twice the value of short-term growth rates but each county group was roughly equivalent in value. Highest growth rates occurred in 2010 and 2013 with very little growth in 2011 and 2012. Early growth rates may reflect economic growth immediately after the recession of 2008-2009 ended. However, this also may be due to differences in regional policies and population patterns. Mean growth rates were relatively similar between county groups and each growth rate was significantly different from zero. Results from the Kruskal-Wallis test indicate no significant difference between the three county groups. No discernible difference between mean long-term growth rates in tandem with the Kruskal-Wallis tests suggest that FTZ have no long-term impacts on median household income.

Long-term growth rates in unemployment were similar to short-term growth rates: as time moved forward from 2010, long-term unemployment growth rates declined at a trend toward the negative. This indicates that the impact of adding an FTZ to a county is highly dependent on the year and may reflect larger economic trends. While these long-term growth rates were dependent on the year, unemployment growth, or decline, was observably better Group 1 counties than neighboring counties each year. This is reflected in the mean values for each county group. Of the three groups, counties adding an FTZ were the only counties that declined in unemployment rates. Neighboring counties had the largest increase of unemployment rates at 11.7%. One-sample t-tests results were significant for Group 2 counties but not the other two county groups. This implies that some noticeable long-term change occurred in neighboring counties after an FTZ was added to Group 1 counties. While Kruskal-Wallis test results recorded no significant differences between these groups, FTZs may have had an impact on the job market

in these counties. This change may reflect the movement of FTZ-related firms and subordinate businesses to Group 1 counties for the purpose of agglomeration. As these firms moved from neighboring counties, unemployment declined slightly in FTZ-counties as a percentage of the total urban population but increased at a higher rate in neighboring counties due to smaller populations.

Long-term growth rates in the number of manufacturing firms were dependent on the year the FTZ was added, with noticeably higher growth rates in Group 1 counties in 2013 than 2010. This was not the case for Groups 2 and 3, as values were erratic across each year with no observable trend. Mean long-term growth rates for Group 1 were the only positive values out of the three groups with a 0.8% growth rate. According to one-sample t-test results, Group 2 was the only county group significantly different from zero, reflecting a significant decline in manufacturing firms three years after an FTZ was added to Group 1 counties. These results mirror unemployment results: as FTZs are added to a county, manufacturing firms in neighboring counties migrate to FTZ-based counties. Growth rates were smaller in FTZ counties due a larger number of manufacturing firms on the outset. While a small but observable change was present in long-term impacts, Kruskal-Wallis results indicate that no significant difference was present in the data. This suggest that FTZs may have a minor long-term impact on the number of manufacturing firms but not significantly compared to surrounding counties.

Long-term growth rates for manufacturing employment were dependent on the year FTZs were added but no yearly trend was observed. Group 1 counties benefited the most each year with positive growth rates from 2011 to 2013. The clear benefit to manufacturing employment in Group 1 counties was also observed in the mean long-term growth rates. Of all three county groups, counties adding an FTZ had a 7.5% growth rate in manufacturing employment while

both Groups 2 and 3 had declining manufacturing employment. This was reflected in both one-sample t-tests and the Kruskal-Wallis test. The only significant t-test result occurred in Group 1 counties and the Kruskal-Wallis test indicated a significant difference between each group. These results suggest that manufacturing firms moved operations from neighboring counties into FTZ-counties and hired employees after constructing new facilities. As indicated by short-term growth rates, counties did not benefit from FTZs the following year, but may have benefited three years later. These results also mirror growth rates in unemployment and manufacturing firms, providing some evidence for the benefits of FTZs. However, caution should be noted. Mean values from unemployment rates and manufacturing firms reveal higher negative impacts for surrounding counties than benefits to FTZ-counties (i.e. once counties added an FTZ, these counties economically improved slightly but surrounding counties declined at a faster rate).

Overall, it appears that FTZs may have some positive impacts but surrounding counties are hindered in the process. In the short-term, counties adding an FTZ saw a decline in unemployment, an increase in manufacturing firms, and a slight increase in manufacturing employment compared to surrounding counties. However, in the long-term, the increase in unemployment rates and decline in manufacturing firms in surrounding counties outpaced the benefits to FTZ-counties. Additionally, while mild impacts were observed, the only statistically significant difference in values occurred in manufacturing employment. While FTZs had a significant impact on manufacturing firms, surrounding counties declined in manufacturing employment, declined in manufacturing firms, and increased in unemployment rates. This suggests that jobs might have migrated from the periphery to the core of each region included in this analysis. Of course, more data is needed to better evaluate the impact of FTZs on a larger scale.

Conclusion

Foreign-trade zones were created in 1934 to give US firms a competitive advantage over foreign producers and promote economic development, or at least that is what Congress claimed. While Congress explicitly stated that FTZs were created "to expedite and encourage foreign commerce, and for other purposes" (H.R. 9322, 73rd Cong., 2nd Sess., 1934), some scholars argued that FTZs were created for corporations to avoid the Smoot-Hawley Tariff of 1930 (Seyoum & Ramirez, 2012). Originally, FTZs were no more that duty free zones near ports of entry but would later turn into something far different than originally intended. The passing of the Boggs Amendment, creation of subzones, and a series of regulatory changes by the Treasury Department and the Foreign-Trade Zone Board resulted in a massive expansion of FTZs across the landscape (Anderson, 1984). This has resulted in a diverse array of industries which take advantage of FTZ benefits.

FTZs are an example of a place-based economic policy designed to promote regional economic growth. While these types of policies are designed to benefit one geographic region, they can lead to capital flight and spatial inequality. This chapter focused specifically on the impact of FTZs on spatial development patterns and longitudinal economic growth patterns on the county scale. Two separate analyses were performed to analyze the effect of FTZs on the landscape. The spatial analysis used spatial regression and GWR to determine if FTZs locations are significantly related to spatial development patterns. The temporal analysis used data from 2009 to 2015 to analyze short-term and long-term changes in economic development after FTZs were established in a county.

Results from the spatial analysis show a significant relationship between FTZs, median household income, unemployment rates, and number of manufacturing firms in a county. This

suggests that FTZs may have an impact on spatial development patterns and reflects the hypothesis that FTZs may lead to agglomeration of similar industries and attract foreign direct investment, all of which can lead to capital flight from other rural regions that do not have FTZs. This conclusion lends credence to claims by Head, Ries, and Swenson (1999) that FTZs are conduits for foreign direct investment in urban areas. While The location of FTZs had a significant spatial impact on all three dependent variables, GWR results reveal a much more detailed relationship. According to these results, physical landscapes may play a role in the relationship between FTZs and development patterns. Results were much stronger around major waterways such as the Mississippi and Ohio rivers, and coastal areas. This would make sense, as more cargo and merchandise enter high trafficked areas and major port infrastructure. The largest mercantile cities are also located along these waterways. Interestingly, local r-squared values were higher for manufacturing firms along the Mexican border, which may be due to trade agreements like NAFTA and USMCA.

Because regression does not prove causality, temporal data were analyzed and grouped into short-term and long-term growth rates. According to these results, no observable impact was present on both short-term and long-term growth rates in median household income. Slight impacts on short-term and long-term percentage growth rates for unemployment were present but not significant. Long-term increases in unemployment rates were higher in surrounding counties, implying FTZs cost more than they benefit. The same conclusion can be drawn from short-term and long-term percentage growth rates in manufacturing firms. FTZs had mild short-term and long-term impacts on manufacturing firms compared to surrounding counties but these impacts were not significant. Similar to unemployment rates, the long-term negative impact on surrounding counties far surpassed the positive impact on counties establishing FTZs.

Impacts on short-term manufacturing employment growth rates were small and no significant differences were present. However, Kruskal-Wallis results revealed a significant difference for long-term manufacturing employment growth rates between county groups. This suggests that FTZs may not have any impact on manufacturing employment in the short-term but once new firms are established and constructed, manufacturing employment increases significantly compared to surrounding counties. Altogether, temporal results indicate that FTZ may have some mild impacts on unemployment and manufacturing firms, but surrounding counties are negatively affected. Additionally, FTZs may have a significant impact on long-term manufacturing employment but there was no observable impact on incomes.

Together, the spatial and temporal analyses present a picture of FTZs not previously observed. According to the Foreign-Trade Zone Board (2018), FTZs were designed to increase exports, provide a competitive advantage to U.S. firms, and promote local development. Results from this paper suggest that FTZs may have improved economic conditions for some counties, but in the process, may have negatively impacted surrounding counties. Spatial results show a significant impact on spatial development patterns that are highly dependent on access to water and neighboring trading partners. The temporal analysis suggests a positive impact on employment, manufacturing firms, and manufacturing employment in counties adding an FTZ but surrounding counties are harmed in the process. Finally, even with these improvements, there were no observable impacts on income. It appears that FTZs have fallen short of the original goal to improve local development and may have caused more harm than good.

Limitations

The spatial analysis performed in this chapter provided a glimpse in time (2016) at the relationship between six independent FTZ related variables and three dependent economic

variables. Because the spatial analysis only evaluated data from 2016, results should not be used to explain historical data. Due to a lack of historical yearly data gathered by the Census Bureau's American Community Survey (ACS), the temporal analysis only consisted of information between 2009 and 2016. Once short-term and long-term growth rates were calculated, only newly created FTZs from 2010 to 2015 (short-term) and 2010 to 2013 (long-term) could be evaluated. A lack of data prevented a more holistic analysis of changes over time. More data is needed in order to better evaluate the impact of FTZs on local and regional development.

CHAPTER IV: THE ESTABLISHMENT OF A FOREIGN-TRADE ZONE IN MOBILE, ALABAMA AND ITS IMPACT ON THE LOCAL COMMUNITY

Abstract

The foreign-trade zone has been an important, often hidden part of local port economies since its inception. The first one opened its doors in 1937 along the Staten Island Harbor in New York City, receiving great fanfare across the country. However, another less well-known zone was approved for operations in 1938 along the Port of Mobile, Alabama's only deep-water port. It closed its doors less than two years later due to diverging political ideologies between two governors who had ultimate authority over port operations. Approved again in 1983 and reopening operations three years later, the Mobile foreign-trade zone would become a major international trade operation for the city and state at-large. The purpose of this chapter is to investigate the history of the zone, evaluate public discourse around its formation, and analyze the external costs incurred by the local community using archival data, observational data, and interviews with local authorities familiar with the zone. Findings suggest that the zone has been a major source of foreign direct investment for the city and greatly contributed to local economic development by attracting major transnational firms to the southern port city. However, observations and interviews suggest the zone has primarily benefited large firms at the expense of smaller firms, provided very little spillover into neighboring boroughs, and adversely affected the local environment and public health.

Introduction

Foreign-trade zones were first established during the height of the Great Depression with the signing of the Foreign-Trade Zone Act of 1934 (19 U.S.C. § 81a-81u, 1934). It would mark

the beginning of an expansive program of partial denationalization throughout the country. The first approved zone opened on Staten Island in 1937 (Sawyer, et al., 1948). Interestingly, another zone was approved the following year for the small southern port city of Mobile, Alabama (Jones, et al., 1941), receiving the title Zone No. 2. It would close its doors the following February for reasons unknown to the larger public and would not return until 1983 (48 Fed. Reg. 9052, 1983). While Mobile, Alabama might seem an inconsequential city in the Gulf of Mexico, the Port of Mobile is currently the 11th largest port in cargo tonnage in the United States (U.S. Army Corps of Engineers, 2021). The foreign-trade zone is inextricably linked to the Port of Mobile, as they work closely together in trade promotion in the Mobile Bay. As with the size of the Port, the Mobile foreign-trade zone is the largest of its type by acreage and outpaced all other zones in the state in total shipments in 2020 (Raimondo & Yellen, 2021).

The Mobile zone has become an integral part of the transnational economy in the Gulf Coast region and provides a unique case-study on the historical growth of the zone and its impact on the local population. Early conflicts over zone operations reflects the divisive nature of political discourse on foreign-trade zones at the national level. At a time where support for the zone program was divided along party lines, progressive Democrat governor Bibb Graves supported the program but his successor, conservative Democrat Frank Dixon was against trade liberalization and federal incursion into the state docks system. As discussed in previous chapters in this dissertation, the same conflict was occurring along the same ideological lines in Washington, D.C. with progressive politicians supporting trade liberalization and conservatives supporting protectionism. Alabama was a microcosm of a larger political conflict unfolding at a national level.

The zone program would be permanently revived in 1983, a time period where the number of zone applications had hit an all-time high (Baldrige, Regan, & Marsh, 1985). Since the zone opened operations in 1986, it has become a major source of throughput for the city but remains largely unknown to the public at-large. With such a major project influencing local and state economic development, the Mobile foreign-trade zone has few detractors and even fewer researchers have analyzed its impact on the local population. While bringing in between $10-25 million in total shipments in 2020 (Raimondo & Yellen, 2021), the zone is not well understood in terms of external costs and benefits to small businesses, neighboring communities, public health, the environment. The purpose of this chapter is to investigate the history of the Mobile foreign-trade zone using archival data and analyze the external costs incurred by the local community using observational data and interviewing local authorities familiar with the zone program.

History of the Mobile Foreign-Trade Zone

Early Years of the Free Zone

In the early 20th century, the Port of Mobile was one of the leading importers in cargo tonnage in the Southeast. By 1910, the Mobile harbor shipped an average of 20 million tons of cargo through its docks, greater that the entire state of Georgia at the time ("Mobile's Wharf Frontage," 1910). According to the *Mobile Register*, policies by pro-business legislatures had diminished the supremacy of maritime and river-based trade in favor of railroads, resulting in the decline in trade for port cities like Mobile. Their solution: the establishment of a free port in Mobile to match similar policy proposals in New Orleans ("'Mobile's the Port'—How to Make it so,'" 1910). The 1901 Constitution of Alabama, still in effect today, had the well-known intention to disenfranchise black and poor white voters throughout the state, wresting power in

the hands of wealthy white landowners. The result was the creation of a powerful central government in Montgomery that could overrule local authorities (H. Jackson, 2002). The constitutional 'reform' in Montgomery gave the legislator ultimate control over docks and harbors throughout the state (A.L. Const. Art. I § 24, 1901). For this reason, the City of Mobile had little control over the local port and had to petition the state legislature for special rights. Centralized control over port operations would become a major theme in the development of a free port in Mobile.

Power was further consolidated in 1915 when Governor Braxton Bragg Comer signed into law and Act creating the State Harbor Commission with authority over all harbors in the state. The governor had direct control over Commission decisions (General Acts of Alabama, No. 628, S. 444, 1915). Eight years later, the legislature abolished the State Harbor Commission and replaced it with the State Docks Commission. The new law gave the commission the authority to establish new docks and control any port infrastructure in the state. In addition, the governor was given the power to appoint the commission board with no legislative oversight (General Acts of Alabama, No. 303, H. 523, 1923). It would be the State Docks Commission that would eventually lead the charge for a free port in Mobile once legislation was passed on a national level (General Acts of Alabama, No. 523, H. 761, 1935).

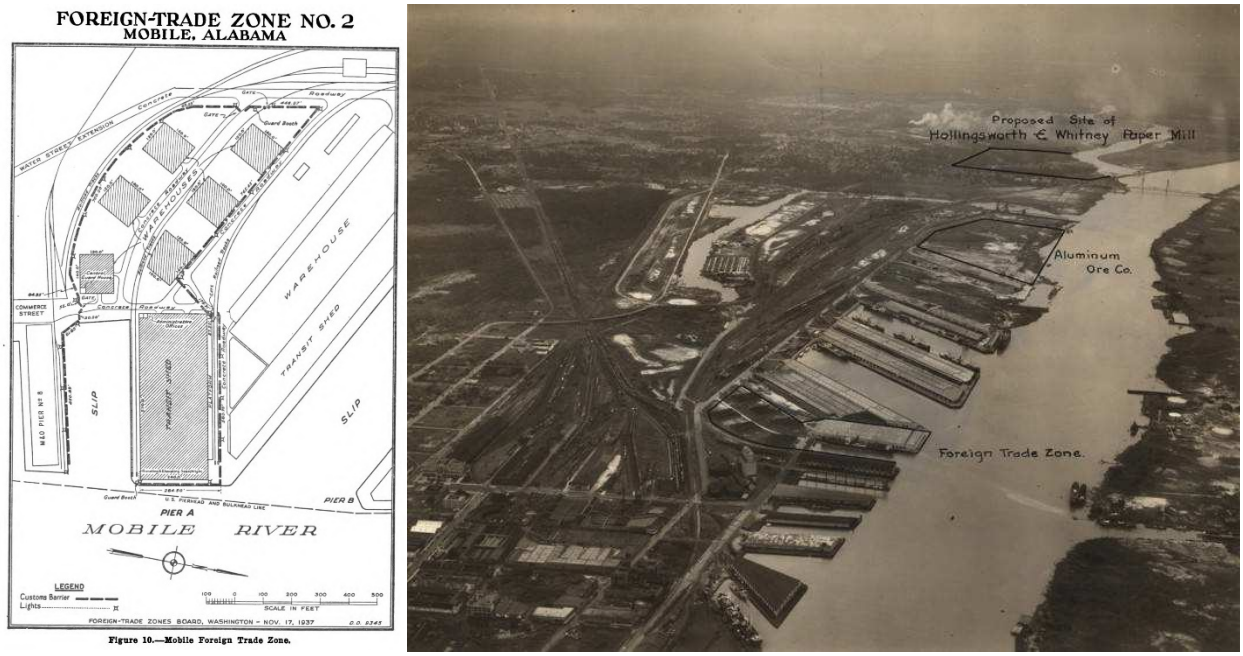
Free ports would eventually be passed in Congress under the newly minted term 'foreign-trade zone' in 1934 (19 U.S.C. § 81a-81u, 1934). The new law prohibited manufacturing and exhibition of merchandise but allowed for storing, repacking, assembly, distribution, and manipulation (Pub. L. No 397, 48 Stat. 998, 1934). Under the leadership of Mayor Fiorello La Guardia, New York City became the first to establish a zone in 1936. The plan called for the construction of a seven-story warehouse on a 78-acre plot of land in Staten Island ("La Guardia

Gets Trade Zone O.K.," 1936). News of the recently established foreign-trade zone in New York reached the newspapers of Alabama and support grew quickly for a zone in Mobile. On July 8, 1935, the state legislature passed an Act extending further control over the Port of Mobile to the State Docks Commission (General Acts of Alabama, No. 167, H. 446, 1935). Two days later, an Act was passed fusing the State Docks Commission with the Mobile Docks Commission (General Acts of Alabama, No. 199, H. 611, 1935). In September, the legislature gave the State Docks Commission the authority to establish a foreign-trade zone at its discretion in any port in the state (General Acts of Alabama, No. 523, H. 761, 1935). By giving the Docks Commission control over foreign-trade zone applications, the state legislature had given complete authority over the issue to the governor, who sat as the ex-officio chairman of the commission. Since its inception, the zone program in Mobile, and Alabama at-large, was all about centralized control over the port.

The stage was now set for Alabama to submit its application to the Foreign-Trade Zone Board, the second application ever submitted for zone operations. In January of 1936, Governor Bibb Graves held hearings to discuss support and opposition to a zone in Mobile. Several industrialists were in attendance, placing pressure on the committee to approve the project ("Free Port for Mobile Backed," 1936). The following year, another hearing was held by the Foreign-Trade Zone Board and once again, powerful business leaders were in attendance showing broad support ("Free Port Sought by Mobile Leaders," 1937). The hearing was followed by the Federal Public Works Administration's approval of $1.5 million for improving dock facilities across Southeast and plans by the Army Corps of Engineers to build a canal connecting the Tennessee River with the Gulf of Mexico by way of the Tombigbee River (Grant, 1937). The Foreign-Trade Zone Board held a meeting on September 22, 1937 and approved the Mobile zone application.

Officially recognized as Foreign-Trade Zone No. 2 (Figure 18), the Alabama State Docks Commission would be placed as the grantee to the new zone (2 Fed. Reg. 2105, 1937).

Figure 18. Mobile Foreign-Trade Zone in 1937 and 1938



Note. Map published in a Bureau of Foreign and Domestic Commerce report and photograph provided by Alabama Department of Archives & History (*Aerial View of the State Docks in Mobile*, 1937; Eldridge, 1938).

On June 14 of 1938, Governor Graves appointed Frederick I. Thompson as the director of the new foreign-trade zone in Mobile ("F. I. Thompson Made Director of Trade Zone," 1938). The foreign-trade zone at Mobile was officially opened on July 22, 1938 after an inauguration ceremony held by Governor Graves. ("Graves Lashes at Criticisms," 1938). By late July of 1938, it was unclear that the zone in Mobile would be profitable. In an interview with *The Huntsville Times*, Mr. Thompson stated that no cargo had yet entered the zone but traffic was expected to increase in the near future ("Graves Lashes at Criticisms," 1938). *The Birmingham News* argued that "some people have been led to expect too much from the operation of Mobile's foreign trade

zone" and the state should "wait and see how it turns out" ("Perhaps Alabama Can Learn from New York," 1938, p. 6).

By the end of 1938, the imports into the zone had increased substantially but improvements to the docks were necessary to handle increased traffic in Mobile Bay. On December 19, a $135,000 bond was issued by the Public Works Administration for port infrastructure improvements ("Bond Issue for Work at Docks Approved," 1938). While revenue was increasing in the zone, it would be reliance on grants and bonds that would lead to its eventual failure. A new governor who ardently opposed government waste was about to take office and the foreign-trade zone would the first issue on the chopping block. On January 18, 1939, the newly elected governor, Frank Dixon, made a public announcement of his plans to abolish the foreign-trade zone in Mobile ("Fair Test for Zone is Sought," 1939).

Governor Dixon told The Birmingham News that the zone "was a mirage" and "never met the approval of shipping men at Mobile." He assured his constituents that removing the zone would be beneficial for the state and that he would "do his best to make Mobile surpass New Orleans as a shipping center of the gulf" ("Dixon's Mobile Plan is Scored," 1939, p.2). Unfortunately for Governor Dixon, R. G. Cobb, Traffic Manager of the Mobile Chamber of Commerce, stated that packing companies had informed him that due to rate differences, they would ship through New Orleans if the zone closed ("Dixon's Mobile Plan is Scored," 1939). It appears the Governor had failed to research the zone, as it had net earnings of approximately $1.3 million and attracted several companies including T. C. I. Barge Line and Federal Barge Line, resulting in an increase in trade from Central and South America ("Mobile State Docks Benefit State, County," 1939). In 1938 alone, the new zone led to an increase of 636,777 tons of cargo ("Mobile Harbor Dock Unity Urged," 1939).

Unfortunately for local supporters, Governor Dixon had already made his decision. On February 6 of 1939, the he abolished the State Docks Commission and replaced it with the Department of State Docks and Terminals. The Act gave the governor authority to appoint and remove the CEO without legislative oversight (General Acts of Alabama, No. 12, H. 59, 1939). The newly appointed CEO immediately requested the Foreign-Trade Zone Board to deauthorize the zone. While Governor Dixon publicly stated that the zone would remain open until it fulfilled its current obligations, the docks manager, R. M. Hobbie ordered the closing of the foreign-trade zone and denied entry of 40,000 pounds Argentine canned beef ("U.S. Must Close Port, Says Dixon," 1939). Governor Dixon would later claim there had been miscommunication between himself and Mr. Hobbie ("Port Closing is Contested," 1939). However, this would not be the last time the governor's actions would contradict his public statements.

After the beef was denied entry, Mr. Thompson pleaded to Governor Dixon that "it is still not too late to rectify the error into which many believe the governor has been lead" ("U.S. Must Close Port, Says Dixon," 1939, p. 7). Further statements made by Mr. Thompson may have delt the death blow for his career when he urged the governor to investigate "personally before striking what may be a body blow at the high rank Mobile maintains as a port of entry" ("Port Closing is Contested," 1939, p. 3). Less than a month after these statements, Mr. Thompson would be dismissed from his duties as director of the Mobile foreign-trade zone. To control the narrative, Governor Dixon claimed that Mr. Thompson resigned voluntarily; however, Mr. Thompson told the press that he was removed from office by the governor ("Dixon Relieves Fred Thompson," 1939).

By February of 1939 it was official, the zone would officially close on April 14, less than two years after it was established (4 Fed. Reg. 1628, 1939). Questions arose regarding the

closing shortly after the news was released. Governor Dixon claimed the Mobile zone was "economically infeasible" because it "was costing approximately $3,000 a month and had handled only $1.32 in merchandise since it was opened" the previous summer ("U.S. Foreign Trade Zone at Mobile Discontinued," 1939, p. 30). This was not uncommon in the early years of the foreign-trade zone, as many zones across the country took several years to return a profit.

If foreign-trade zones were designed to promote trade and boost economic development, why would a port system such as Mobile, the largest of its kind in the southeast, not benefit from such a venture? This was a question that remained unanswered as Governor Dixon continued to consolidate government agencies across the state. According to Feldman (2015), Governor Dixon was a staunch conservative and immediately instituted a program to streamline the Alabama state government. He quickly "eliminated twenty-seven government agencies" and consolidated those agencies into one department (p. 215). Each new department was answerable only to the governor. The governor was taking advantage of the powers given to him by the 1901 Constitution and the foreign-trade zone in Mobile was just one of many policies that would be ended under his administration.

Mobile Establishes a New Foreign-Trade Zone

In 1950, the Boggs Amendment was passed in Congress allowing for manufacturing in Foreign-Trade Zones (Pub. L. No. 397, 48 Stat. 998, 1950). Two years later, the Foreign-Trade Zone Board issued an order creating the subzone, which allowed individual corporations to apply for subzone status directly from the Board with a less stringent approval process (17 Fed. Reg. 5316, 1952). By the early 1980s, a Treasury decision and Customs Service decision reduced the dutiable amount payable on products entering the domestic market (C.S.D. 82-29, 1981; T.D. 80-

87, 1980). Each of these changes in the structure of foreign-trade zones resulted in a massive expansion of the zone program across the country.

Mobile would join the growing number of cities vying for a zone of their own. On January 4, the City of Mobile filed an application with the Board to establish a general-purpose zone in the Brookley Industrial Complex, a warehousing portion of the Brookley Airport (47 Fed. Reg. 992, 1982). The application for a zone in Mobile followed an Alabama State Act relinquishing control over zone applications from the State Docks Department to counties, cities and corporations (General Acts of Alabama, No. 498, H. 1158, 1977). Mobile would be the first city in Alabama to exploit this new act when it submitted its application in 1982, only two years after the Treasury Decision regarding dutiable goods. The foreign-trade zone in Mobile and another in Huntsville would be approved on March 3, 1983 but Mobile would officially be counted as having the first zone in the state (47 Fed. Reg. 5923, 1982; 48 Fed. Reg. 9052, 1983).

By January of 1986, Mobile completed construction of warehouses in the Brookley Complex and filed paperwork to open zone operations ("Third Alabama City to Have Trade Zone," 1986). The following year, Foreign-Trade Zone No. 82 received its first shipments of merchandise, with a total of $340,000 worth of foreign goods imported and $360,000 worth of finished goods sent through customs for domestic consumption (Baldrige, Baker, & Marsh, 1988). By April of 1988, several new firms showed interest and the zone operator applied for expansion of the zone to include parts of the Brookley Airport (53 Fed. Reg. 12798, 1988). That same year, Mobile opened its first subzone in the one square-mile ADDSCO shipyard complex on Pinto Island. This would be the first firm allowed manufacturing within zone boundaries. According to the order, ADDSCO Industries could manufacture ships within the new subzone while avoiding duties on all raw materials except for steel (53 Fed. Reg. 7955, 1988).

The new subzone was hailed by newspapers as a potential boon for the shipbuilding industry in Mobile. *The Montgomery Advertiser* argued that the new zone would "give the big shipbuilder a competitive edge" over other firms. ADDSCO's lead attorney, Winn Faulk, claimed the move would help to counteract recent layoffs and would boost local employment (Donelson, 1988, p. 7C). News on the approval of Subzone No. 82A reached other manufacturers in the region and by November of 1989, the Foreign-Trade Zone Board approved another subzone at the Degussa Plant located in Theodore, a suburb of Mobile (54 Fed. Reg. 48008, 1989). By March of 1990, the Board approved the expansion of the Brookley Complex to include the Port of Mobile (55 Fed. Reg. 8159, 1990). Public and private pressure from major industrial firms had resulted in an increase in zone size and operations.

Interest in subzones had reached Peavey Electronics Corporation in Foley, approximately 30 miles southeast of Mobile, and an application was submitted to the Foreign-Trade Zone Board on March 3, 1994 (59 Fed. Reg. 53, 1994). The following year, Sony Magnetic Products Inc., located in Dothan, approximately 160 miles east-northeast of the Brookley Complex, applied for subzone status as well (60 Fed. Reg. 61527, 1995). By March of 1996, Zeneca Inc. agricultural chemical corporation, located approximately 26 miles from the general-purpose zone, submitted an application for subzone status. The Zeneca subzone would be approved on November 15 of that same year (61 Fed. Reg. 5812, 1996). None of these firms were located in the city of Mobile and two were located outside of Mobile County. The broad discretion given to the Board allowed it to liberally approve these applications without congressional oversight (56 Fed. Reg. 50793, 1991).

Noticing the liberal approval of subzones across the southern portion of Alabama, Coastal Mobile Refining Co. joined the list of companies vying for zone benefits. While formally

recognized as a Mobile address, the Coastal Mobile Refinery sat in two locations: (1) in Chickasaw, Alabama, a small rural community to the north of Mobile and (2) on Blakely Island, located between the Mobile and Spanish Rivers. Coastal Mobile Refining Co. applied for subzone status on February 18, 1997 and received approval on October of the same year (62 Fed. Reg. 51829, 1997). Coastal Mobile's application was soon followed by an application from Shell Oil Company for two subzone locations along Chickasaw Creek and on Blakely Island. The Shell subzone was approved in March of the following year (63 Fed. Reg. 13168, 1998).

The growth in oil and petroleum-based subzones in Mobile and across the U.S. was followed by a regulatory change in the categorization of petroleum and petrochemical products in subzones. On August 20, 2000, the Foreign-Trade Zone Board recategorized petroleum-based imports into refinery subzones as "privileged foreign status" (65 Fed. Reg. 52696, 2000). This change in regulations allowed refineries to import crude oil and refine the oil for domestic consumption without paying duties (19 C.F.R. § 146.41, 1986). This decision coincided with an increase interest in foreign-trade zones by oil companies and an increase in oil lobby spending of $12.2 million in 1990 to $35.9 million in 2000 (Center for Responsive Politics, 2021). This regulatory change had a lasting impact on the Mobile zone, as the petroleum industry is a major contributor to the local economy to this day.

The early years of foreign-trade zone development in the state of Alabama began with a slow start, as most companies utilizing zones were based around warehousing. However, the late 1990s witnessed an increase in subzone usage by major corporations. The growth in subzones across cities like Mobile, Birmingham, and Huntsville was due in part to the promotional efforts of Greg Jones, a partner at the Foreign Trade Zone Corp., located in Mobile. The introduction of foreign-trade zones in Mobile not only had an impact on international trade in the Mobile Bay

area, but it also created a legal industry all its own. Founders of FTZ Corp., Craig Pool and Greg Jones, managed zones in Mobile throughout the early 1990s when local firms began petitioning them for assistance in the application process (*About the Foreign-Trade Zone Corporation*, 2019). By 1994, Messrs. Pool and Jones formed FTZ Corp. and by 1996, developed SmartZone software allowing zone-based firms easier application processing.

The creation of a firm specifically focused on promoting the growth of zone usage was not limited to Mobile, as the National Association of Foreign-Trade Zones (NAFTZ) was founded in 1973 as a public/private partnership designed to promote the growth of zones throughout the U.S. (National Association of Foreign-Trade Zones, 2017). The NAFTZ was responsible for a major advertisement campaign throughout the early 1980s that resulted in a major growth in zone usage across the country (Adams, 1981; Carey, 1981; Turnbull, 1982). By the early 2000s, NAFTZ directors had built a close relationship with the Rockefeller Group and IDI Inc. in an effort to attract funding for foreign-trade zone construction projects in Southern California, Chicago, and New Jersey (Muto, 2003; Jordan, 2004; Bonner, 2005). Public/private partnerships like NAFTZ and the FTZ Corp. would be pivotal in attracting firms to foreign-trade zones over the next decade.

By the turn of the century, the Mobile foreign-trade zone had grown to include six subzones and one site location at the Brookley Industrial Complex, of which received approximately $1 million worth of non-dutiable merchandise in 2000 (Mineta & Summers, 2001). However, the ultimate beneficiaries of inverted tariffs were the subzones. That same year, all five subzones received approximately $314.4 million worth of non-dutiable merchandise, of which $262.7 million was specifically dispatched to Shell Oil and Coastal Mobile Refinery (Mineta & Summers, 2001). By the end of 2000, non-privileged status had been extended to both

refinery subzones; Coastal Mobile Refinery was renamed to Trigeant EP, Ltd. and manufacturing was authorized on the Zeneca subzone (65 Fed. Reg. 52696, 2000; 65 Fed. Reg. 47375, 2000). The growth in subzone usage in Mobile would set the stage for further expansion in the following decade.

Growing shipping demand in Mobile harbor attracted Austal to the Mobile Bay area. By the end of 1999, Austal established operations in Mobile, initially hiring fewer than 100 employees (Austal, 2021a). In January of 2001, Austal applied for subzone status and would be approved by the Foreign-Trade Zone Board on February 12, 2002 (67 Fed. Reg. 8519, 2002). The addition of Austal and an increase in merchandise into the zone resulted in the City of Mobile applying for the expansion of the Brookley Complex site and the addition of twelve new sites throughout the region (69 Fed. Reg. 48, 2004). The approval of these new site locations expanded the reach of the zone to Lemoyne, Frisco, Theodore, and Loxley (International Trade Administration, 2021).

By 2005, the Mobile zone had grown to a total of thirteen site locations and eight subzones. By the end of the decade, manufacturing privileges would be extended to E.I. DuPont de Nemours and Co., Kvaerner Oilfield Products, Bender Shipbuilding and Repair Company and Sony Electronics Inc. (69 Fed. Reg. 33632, 2004; 69 Fed. Reg. 40600, 2004; 69 Fed. Reg. 53885, 2004; 74 Fed. Reg. 29472, 2009). However, zone expansion and subzone approvals in Mobile slowed quickly in the 2010s. Only two new subzones were approved over the next decade: ThyssenKrupp Steel and Stainless USA, LLC. in Calvert and two site locations for Rohr, Inc. in Foley and Loxley (76 Fed. Reg. 87, 2011; 85 Fed. Reg. 30928, 2020). During the same period, new general-purpose zone site locations were approved for a warehousing complex, John Fayard Moving & Warehousing, Technip UK, Ltd., and Airbus Americas, Inc., expanding the

general-purpose zone to a total 655 active acres across the region (International Trade Administration, 2021).

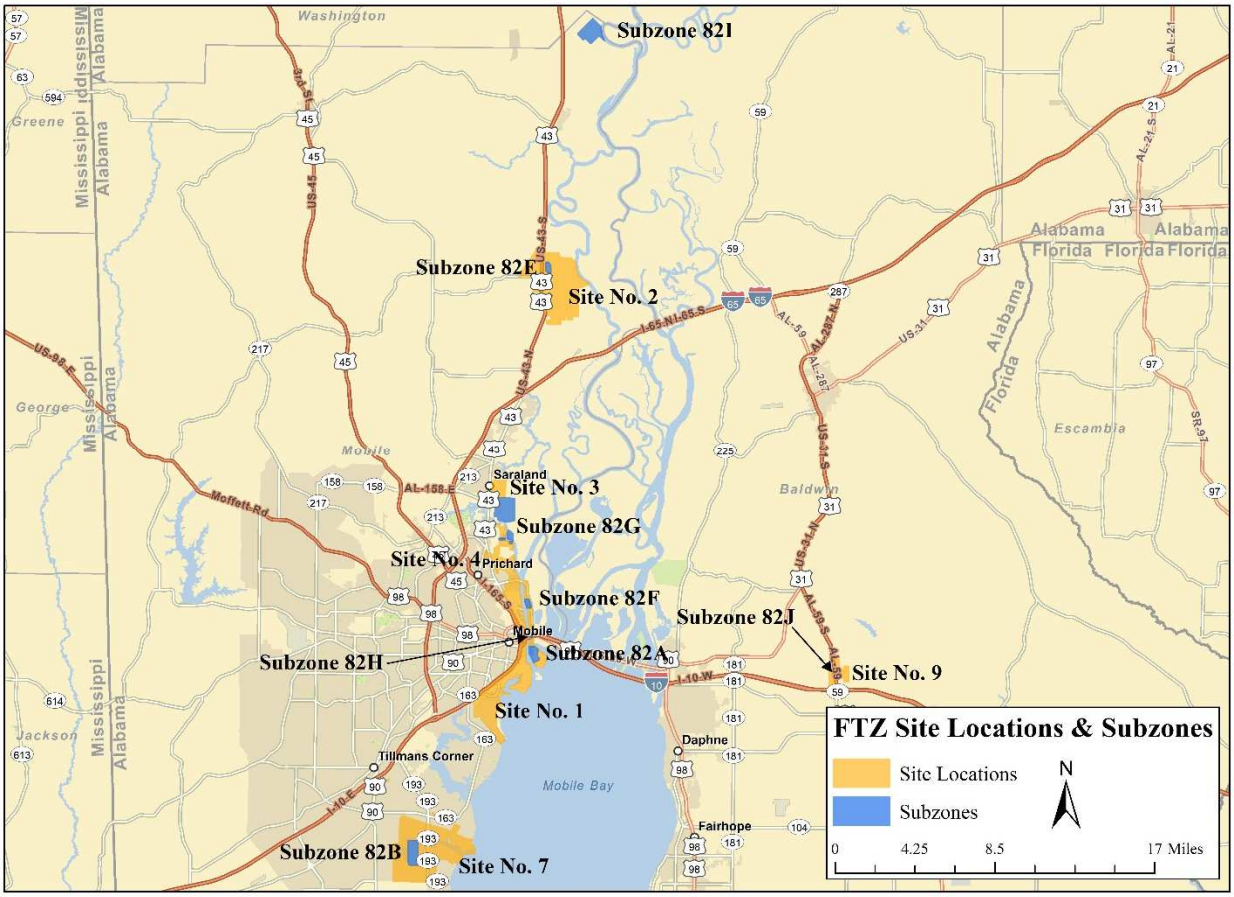
Today, Foreign-Trade Zone 82 is rarely discussed in local and state media but plays an important, often hidden role in the regional economy. Major industrial firms such as Airbus Americas, Aker Solutions, Outokumpu Stainless USA (formerly ThyssenKrupp Steel), Rohr Aerospace, Core Industries, Keyport Warehousing, M.H. Wirth, and Technip still continue operations within the general-purpose zone and subzones. In 2020 alone, the Mobile foreign-trade zone produced approximately $4.2 billion in merchandise, of which $2.8 billion consisted of value-added products (Jones, 2021). Of the major firms located within the general-purpose zone and subzones, Airbus employs approximately 1,000 people, Aker Solutions employs 170 people, and Outokumpu Stainless employs more than 1,200 people (Jones, 2021). These three firms together employ approximately 1.2% of the population of Mobile, an extraordinary proportion of the population, all things considered.

Research Methodologies

To better understand the impact of the Mobile foreign-trade zone on the local population various professionals were interviewed from the Mobile Chamber of Commerce, FTZ Corp., a local news organization, and a non-profit organization. In-person interviews were recorded with a handheld recording device and manually transcribed. Remote interviews were recorded over Zoom and transcribed using the program's built-in audio transcription software. Due to the nature of this study and the relatively small number of people interviewed, an intensive interview method was performed where open-ended questions were asked of participants. Each interview was treated as separate interactions and questions were tailored to each respondent's specialization.

Field observations were performed in and around the Brookley Industrial Complex (Site No. 1), Lemoyne Industrial Park (Site No. 2), Mobile River Industrial Park (Site No. 3), Frisco Industrial Park (Site No. 4), Theodore Industrial Park (Site No. 7), Loxley Industrial Park (Site No. 9), Atlantic Marine Alabama, LLC (Subzone 82A), Evonik Degussa Corp. (Subzone 82B), Syngenta Crop Protection (Subzone 82E), Trigeant EP, Ltd. (Subzone 82F), Shell Chemical LP (Subzone 82G), Austal (Subzone 82H), Outokumpu Stainless (Subzone 82I), and Rohr, Inc. (Subzone 82J) (Figure 19). Detailed field notes were written by hand at the time of each observation. Due to heightened security around various foreign-trade zone sites and subzones, it was difficult to remain in one area too long without direct supervision. At the time of observation, each facility was closed to the public due to corporate COVID-19 lockdown protocols. For this reason, observations could not be performed within facilities and had to be completed outside the boundaries of each industrial location. Along with observational notes, photographs were taken and descriptions were made based on each photograph.

Figure 19. Map of Observation Locations



Realities on-the-Ground

The largest portion of Foreign-Trade Zone No. 82 sits alongside the Mobile Bay and Mobile River, taking advantage of international shipping lanes to and from the state of Alabama (Fig. 2). On the ground, Site 1 appears to be nothing more than a large industrial park. However, upon further study, the site separates itself from the rest of the city with a myriad of barbed-wire fencing, an elevated interstate highway, and a cluster of railroad tracks (Field notes 24 May 2021). The site runs approximately 13.3 miles south to north starting in the Mobile Bay and ending along the Chickasaw Creek due east of the town of Chickasaw. Site 2 encompasses the entirety of the Lemoyne Industrial Park, located approximately 11 miles north of the northern

most portion of Site 1. Together, these two sites make up 89 percent of the 655 total active acreage of the Mobile foreign-trade zone (International Trade Administration, 2021). The remaining sites dot the landscape of Mobile, Saraland, Calvert, Loxley, Foley, and Dothan. All things considered, the shear area of the zone as compared to the settled Mobile metropolitan area reveals an integral and important program in the local community, whether the population knows it exists or not.

In May of 2021, I traveled to Mobile to observe the geographical aspects and operations of each major site and interview prominent business and government leaders who deal directly with the program. Over the next two months, I made several detailed observations and interviewed two supply-chain specialists from zone-based firms, a local naturalist, a local journalist, three executives from the Mobile Chamber of Commerce, and the Mobile zone manager. Members from the Alabama Port Authority and local government officials were contacted but declined interviews. Various anonymous sources on the ground were asked questions concerning the foreign-trade zone and Port Authority; however, names were not collected to protect their identities. The remaining portion of this study discusses the details of these observations and interviews and analyzes the overall impact of the foreign-trade zone on the population and landscape.

Do Small Firms Benefit?

One of the main concerns of this case study is the overall impact of the foreign-trade zone program on the local population. Two things in particular stood out: observations often conflicted with the interview responses from local business leaders and interview responses from those business leaders often conflicted with responses from the local naturalist and journalist. One issue of concern was the direct impact on small business. As I observed the daily operations

and types of firms located within each zone, it became apparent that few small businesses were benefiting from the zone program. The aerospace industry is a major benefactor of the program specifically clustered around the Brookley Airport Complex. One of the largest employers in this complex is Airbus, who finished construction and opened the facility in September of 2015 (Airbus, 2015). Other firms such as MAAS Aviation and Bristow Group's Era Helicopters have agglomerated around the Brookley Complex. All three firms are large transnational corporations that exist in multiple countries throughout the world.

The shipping industry dominates the firms located along the central docks to the eastern side of downtown. Of the major firms, Austal and Alabama Shipyard, LLC take up the largest portions of the area. Austal, a ship manufacturer based in Australia with manufacturing locations in five countries globally, is large transnational corporation that employs approximately 4,000 employees (Austal, 2021b). Of these two shipping companies, Alabama Shipyard is the only one that is considered a small business under U.S. Small Business Administration (SBA) metrics. According to Dun & Bradstreet (2021), Alabama Shipyard employs 131 people across various locations. Unfortunately, this number could not be independently verified.

The northern portion of Site 1 and Site 2 in Lemoyne primarily contain large transnational petrochemical companies such as Shell Chemical, Martin Energy Services, AMVAC Chemical Corp., Nouryon Chemical Company, and Arkema Inc. The sheer size of these facilities can easily intimidate the onlooker. Security operations alone make it difficult for small firms to take advantage of the foreign-trade zone program. Each of these locations is surrounded by barbed-wire fencing with security guards protecting employee entrances (Field notes 25 May 2021). There is very little observational evidence of small firms benefiting from the local foreign-trade zone.

Observational documentation reflects statements made by three prominent leaders within the Mobile Chamber of Commerce. In an interview on May 27, 2021, Christina Stimpson, Director of Economic Development, made an interesting observation on the state of small business within the zone program. The zone program is used by the Chamber, along with various other incentives, to attract manufacturing and trade-related companies to the Mobile region. However, according to Ms. Stimpson, "it's really the bigger companies that are going to have the resources to take advantage of it. The costs associated, as far as I understand, outweigh the benefit for some of the smaller guys" (C. Stimpson, personal communications, May 27, 2021). This sentiment was shared by David Rodgers, Vice President of Economic Development, who was also present during the interview (D. Rodgers, personal communications, May 27, 2021).

In a later interview, Bill Sisson, President and CEO of the Chamber of Commerce, commented that he was "only aware of the larger ones that do take advantage of it" (B. Sisson, personal communications, June 7, 2021). However, he mentioned that he was "certain there are some small ones as well." Nine days later, I spoke directly with Greg Jones, the Mobile Zone Manager and Corporate Secretary for the FTZ Corp. In his response to my question concerning small business uptake, Mr. Jones provided some conflicting information from the previous interviews. He responded by stating that zone usage is "kind of a mixture of both" small and big business. To validate this point, he referred to a document that he sent me via email several months prior to our conversation and commented that the zone program is "designed to be used by anybody who either has a tariff problem, or who can help somebody who has a tariff problem" (G. Jones, personal communications, June 16, 2021). While both valid points, the purpose of a program and how the program actually performs may differ.

On April 20, 2021, Mr. Jones emailed me a summary paper outlining major general-purpose and subzone users. While the document provided valuable information, it only included a list of eight companies currently located within the zone and only provided information for the top three producers (Jones, 2021). Of the list of firms, only one would be defined as a small business, Keyport Warehousing, located in Loxley, Alabama. According to its official website, Keyport currently has a permanent warehousing staff of seven people (Keyport Warehousing, 2018).

Contradictions between Chamber officials and Mr. Jones may be due to several factors but ultimately make it difficult to discern the impact of the zone program on small business. One issue that was raised by Chamber officials was their lack of direct experience with the foreign-trade zone. As stated by Ms. Stimpson, the zone program is first presented to a prospective firm as they are introduced to area business policy but once a company shows interest in the program, they "would make the introduction to Greg [Jones] and then that's kind of the end of it for us" (C. Stimpson, personal communications, May 27, 2021). All three Chamber officials hold Mr. Jones in high regard, as he has been a wealth of information and an integral part of the zone program in Mobile since 1985.

Discrepancies between respondents may also be due to differing definitions of small business. According to Mr. Rodgers, the Mobile Chamber of Commerce defines a small business as a company with "100 employees or less but the federal government calls small businesses 500 or less" (D. Rodgers, personal communications, May 27, 2021). Because the Chamber's definition of small business differs from that of the federal government, a company with 400 employees would be excluded by the Chamber but included by Mr. Jones from a compiled list of zone beneficiaries.

While Mr. Jones's 36 years of experience with the Mobile foreign-trade zone awards his response more weight than others, it is hard to deny from personal observations that large transnational firms are major benefactors of the zone program. Peer-reviewed research has also questioned the types of firms that benefit from the program. According to Kanellis (1995), due to rules governing challenges to the addition of a new firm to an existing foreign-trade zone, "a small manufacturer who competes in the same product market as a national competitor could be overwhelmed by the competitor's challenge to its FTZ application" (p. 634). In this case, a large transnational firm would have more resources to lobby the Foreign-Trade Zone Board against the new firm; however, a smaller firm may not have the resources to provide a counterclaim.

The very nature of the zone program gives the Board significant authority over application approval. Few Congressional laws have been created to regulate the types of firms that can be admitted. However, one regulation that stands out states the Board will evaluate each new addition to a zone based on "other relevant information relating to public interest and net economic impact considerations, including technology transfers and investment" (15 C.F.R. § 400.31, 2012). Given the broad authority of the Board on determining the public interest of an approval, larger firms with lobbying power will have an advantage over smaller firms. Additionally, smaller firms would have less of a net impact on "technology transfers and investment."

Board control over the approval process gives large firms with resources and influence an advantage within this process. For example, in 2018, President Donald Trump signed a presidential proclamation placing a 24 percent tariff on steel from all countries except Mexico and Canada (Proc. No. 9705, 2018). The proclamation was made possible by Section 232 of the Trade Expansion Act of 1962, which allows the President to levee tariffs on products deemed

important to national security (19 U.S.C. § 1862, 1962). However, the tariff did not apply to companies in foreign-trade zones. As long as those companies re-exported the finished product, the tariff would not be applied. Interestingly, large companies like Aker Solutions were able to receive exemptions from products sold in the U.S. market. In an interview with Melissa Robertson, Service Manager at Aker, she argued that "Section 232 has muddied the waters a little bit. We've managed to secure exemptions on our stainless steel." When describing the Presidential tariff on steel, she stated, "I don't think it was a negative thing. […] I'm stating the obvious, it wasn't a negative thing for everyone" (M. Robertson, personal communications, July 30, 2021). Section 232 was clearly not a negative thing for Aker, since it gave the company a competitive advantage over other firms who were forced to comply with the tariff. A Norwegian company with over 15,000 employees and 56 locations across 22 countries (Aker Solutions, 2021), a firm of Aker's size can use its influence to secure exemptions to various rules, even if it runs contrary to presidential proclamations regarding national security interests.

Another pertinent issue directly impacting the ability of small firms to benefit from the zone program are costs associated with the application process. Subzone applications cost non-manufacturing companies $4,000 and manufacturing companies $6,500. Additional general-purpose zones cost $3,200 and the expansion of an existing zone costs $1,600 (15 C.F.R. § 400.29, 2012). These costs do not include construction and infrastructure development costs. Additionally, each zone is required to follow a set of security parameters such as physical barriers, alarm systems, perimeter fencing, manned or monitored gates, and other minor security procedures (CBP, 2016). With the added costs of paperwork and security infrastructure, small firms are less likely to use the program. As alluded to by Ms. Stimpson, costs associated with the zone program may outweigh the benefits to smaller companies.

The topic of security and its implementation will be discussed in more detail later in this chapter; however, in terms of cost, foreign-trade zone security operations may act as a barrier of entry to small firms. According to the CBP (2016), basic security operations are designed to ensure that cargo is safeguarded from theft and smuggling. As I will discuss later, the implementation of these security measures on the ground does not match the stated intention. In order to better understand zone security operations, I spoke with Nathan Stepan, Team Manager of the Supply Chain Management Division at Outokumpu Stainless. When asked about security operations at the Outokumpu subzone in Calvert, he stated that the campus was "enclosed by a perimeter fence that is regularly patrolled […] we have lots of access controls. There are badge access points everywhere" (N. Stepan, personal communications, May 28, 2021). Observations on the ground confirmed Mr. Stepan's comments. The facility is surrounded by a fence along land boundaries and guarded by a wall along the riverfront. Front gates are guarded by a security office and identification badges are checked upon entry (Field notes 29 May 2021).

Guest access is normally limited to individuals granted access by management but is currently forbidden due to COVID-19 restrictions (N. Stepan, personal communications, May 28, 2021). Additionally, Outokumpu is also a participant in the Customs Trade Partners Against Terrorism (CTPAT) program. According to Mr. Stepan, the program is the Customs and Border Protection's (CBP) "response to the post-9/11 world." The program is voluntary but requires various layers of security including cameras, IT security, and a private security force. The CBP also requires tightened security measures developed between trading partners, suppliers, and the supply chain (N. Stepan, personal communications, May 28, 2021). CTPAT benefits include the reduction in the number of CBP examinations, shorter wait times in transition, and a myriad of

other benefits that give participating companies a competitive advantage over other firms (U.S. Customs and Border Protection, 2021).

The Aker facility in the Middle Bay Port of Theodore has similar security operations. According to Ms. Robertson, their facility is gated and requires security badges for all employees. “There is a back gate at the key side, where you would need to have a TWIC card in order to access the key side” (M. Robertson, personal communications, July 30, 2021). A Transportation Worker Identification Credential (TWIC) card is required on the Aker facility because it is located on maritime port that accepts international shipments (T.S.A., 2016). Aker’s security operation has evolved over the years and only recently has its facility received approval for the entire campus to be considered a foreign-trade zone. Previously, Aker was required to keep zone-related materials in a separated fenced area, but after management petitioned CBP, the entire campus was designated as part of Site No. 7 (M. Robertson, personal communications, July 30, 2021). Like the Outokumpu Subzone, the Aker facility funds the entire operation through private security, a cost that can be insurmountable for smaller industrial firms.

While observational data and information gleamed from interviews provide some perspective on the types and sizes of firms utilizing zone operations, it is unclear whether small businesses are actually benefiting. The only respondent to state unequivocally that small businesses participate in the program was Mr. Jones. While his 36 years of experience with the Mobile foreign-trade zone affords him a certain level of confidence, it is difficult to confirm his testimony with available data. The lack in data impedes a clear and exhaustive study of the types of industries who use the zone. Foreign-Trade Zone Board reports issued to Congress each year only provide approximated summary statistics for merchandise, exports, and total number of employees. For example, in 2020, the Mobile foreign-trade zone employed somewhere between

1,501 and 2,000 people. Within the same report, only three companies were listed under "Production Activity" (Raimondo & Yellen, 2021, p. 15). As stated earlier, Mr. Jones provided information on various firm activities in the zone, but only eight firms were listed. A lack in data and conflicting statements from interview respondents make it difficult to form reliable conclusions but there is a clear cost associated with the zone program that can impact the size of the firms that benefit.

Does the Zone Program Help the Average Person?

If there is no clear way to distinguish whether large or small firms benefit the most from the zone program, then perhaps observational and interview data can provide insight on its impact on the local community. At first glance, the zone program in tandem with local port infrastructure has been a boon to local and regional economic development. According to the Alabama State Port Authority (2021), the Port of Mobile has had a direct and indirect impact on 154,447 jobs throughout the state, adding approximately $25.4 billion annually to the state's economy. Of course, this is statewide data on the Port of Mobile and does not distinguish between the port and the foreign-trade zone. Observations on the ground provide some context to the impact on local development.

Heavy construction projects cover the landscape throughout Site No. 1, a sprawling industrial zone extending from southern tip of Brookley Airport to the Port of Chickasaw, approximately 11 miles to the north. The entire coastline of Mobile is guarded like a fortress with barbed-wire fencing and security gates. Some of the best infrastructure sits within Site No. 1. One glaring example of opulence is the newly constructed Airbus A220 complex located adjacent to the Brookley Airport runway (Field notes 24 May 2021). This facility officially opened its doors in May of 2020 and was approved for foreign-trade zone use in September of

the same year (85 Fed. Reg. 63078, 2020; Airbus, 2020). Newly concreted sidewalks with regularly placed decorative brick pavers line the outside of the parking lot. The massive parking lot is dotted with evenly spaced street lamps and associated motion detectors. The occasional security camera is strategically placed, reminding you at all times that you are being watched (Figure 20). Large industrial buildings sit behind ten-foot tall barbed-wire fencing and security checks identification cards as employees enter the massive facility (Field notes 24 May 2021). The 270,000-square-foot campus is a reminder of the type of power a large industry player like Airbus has on local development.

Figure 20. Airbus Facility in the Brookley Industrial Complex

Note. Personal Photographs (24 May 2021).

Traveling north along Broad Street to the east of I-10, one can clearly see the impact of investment in the infrastructure and architecture. This area acts as an enclave separated from other city projects where the primary purpose is industrial development. Streets have been repaved, sidewalks updated, lighting placed consistently along the Broad Street corridor, and modern architecture distinguishes this industrial center from the rest of Mobile. Various engineering firms such as Continental Aerospace Technologies, Safran Aerospace, and VT Mobile Aerospace Engineering agglomerate near the new Airbus facility bringing in capital from

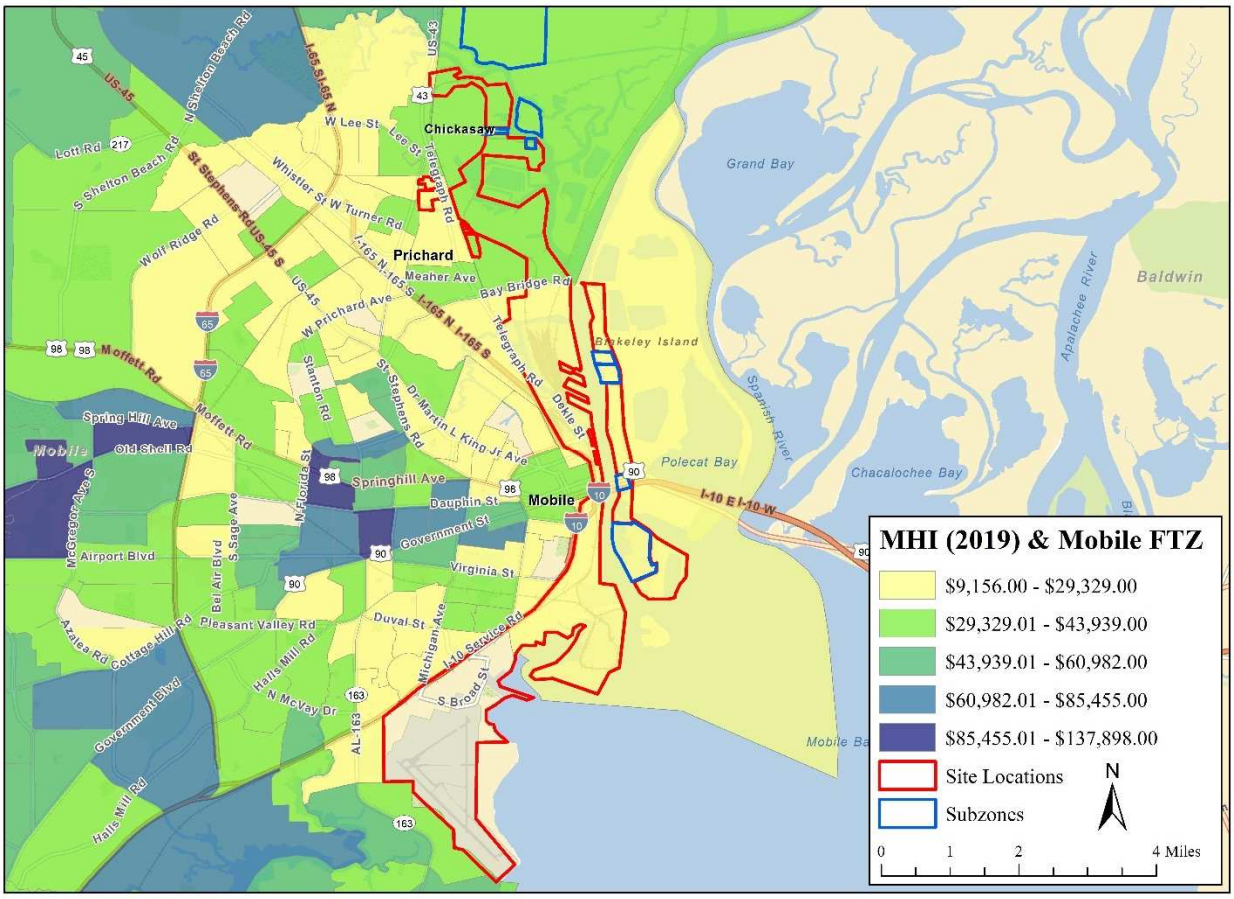
around the globe. The parking lots alone signify the upper middle class. Spaces are filled with Chevrolet Corvettes, Ford Expeditions, and Lincoln Navigators, yet the bus stop is out of commission due to COVID-19 restrictions (Field notes 24 May 2021).

Eventually, Broad Street converges with Baker Street and travels parallel with I-10. The union of Baker Street and I-10 marks the western boundary of Site No. 1 and blocks its growth into Mobile proper. This portion of the zone differs from the aerospace sector to the south. Scattered forests and floodplains surround railyards and large logistics firms (Field notes 24 May 2021). Just to the north of these logistics firms sits clustered environmental solutions firms such as Amwaste, LLC and Oil Recovery Company, Inc. The location of these companies is strategic, as industrial development in the area has not been kind to the local ecosystem. I will discuss this in more detail later, but the very fact that these firms are needed highlights the external cost of the zone on the local population.

The northern end of Site No. 1 consists primarily of petrochemical corporations, which control their own docks. These firms extend north along the Mobile River and continue north by northwest past the confluence of Chickasaw Creek and the Mobile River (Field notes 25 May 2021). Some of the poorest communities sit alongside the boundary of Site No. 1 and neighbor the heaviest industrial producers (Figure 21). On the southern portion of the site, Arlington Housing Projects and the Mobile Housing Authority sits on the northwestern boundary of the Brookley Airport (Field notes 24 May 2021). Africatown, a historic Black settlement wedged between downtown Mobile and Chickasaw, borders the petrochemical industrial sites at the confluence of Chickasaw Creek and the Mobile River. Both regions have been plagued by poverty but a particularly egregious case occurred in Africatown. Between 1960 and 2019, the

population of the region declined from 12,000 to 2,000 with few examples of economic growth (Elliot, 2019).

Figure 21. Map of Median Household Income and Mobile Foreign-Trade Zone Boundary



Note. Data referenced from the International Trade Administration (2021) and U.S. Census Bureau (2021a)

Observable data on the ground suggests that neighboring communities are not receiving a direct benefit from the foreign-trade zone. According to 2019 American Community Survey estimates, Mobile County had a median household income of $47,583, whereas block groups neighboring Site No. 1 grossed an average of $27,864 in the same year (U.S. Census Bureau, 2021). Median household incomes for these block groups were only 7.6% above the official

poverty level for a family of four in 2019 (ASPE, 2019). These observations run contrary to statements made by members of the Chamber of Commerce. When asked if the zone program has helped alleviate poverty in the region, Mr. Sisson stated that the program has resulted in a net benefit to the area because zone-related firms have employed a large number of unskilled laborers, trained them in various specializations, and paid decent wages (B. Sisson, personal communications, June 7, 2021).

The effort to provide low-skilled workers with training is part of the Alabama Industrial Development Training (AIDT) program sponsored by the Alabama State Government. The AIDT program provides various training programs in maritime welding, regional workforce development, and leadership (AIDT, 2021). Mr. Jones argued that the AIDT program was pivotal in developing a highly skilled workforce and has been employed by various zone-related firms in the Mobile area (G. Jones, personal communications, June 16, 2021). According to Mr. Jones, a skilled workforce is necessary for a community to remain competitive in a globalized market. If programs are not instituted to promote a highly skilled labor force, "then your community is going to be a victim of globalization."

Messrs. Jones and Sisson provide valid points but present an interesting conundrum to consider. The AIDT program is an important part of Alabama's workforce training; however, the program is not offered to individual laborers. The program is "offered in many areas, at no cost, to new and expanding businesses throughout the State" (Alabama Works, 2021). The AIDT program offers an important service directly to firms but an individual person would not be able to enroll in the program without the sponsorship of participating company.

Both Aker and Outokumpu utilize AIDT to train incoming employees. However, the program is largely controlled by each company based on need. According to Ms. Robertson, "the

AIDT program has been made available to the management team here to decide what […] programs and trainings would benefit your team" (M. Robertson, personal communications, July 30, 2021). Outokumpu went further and developed a co-op program with Citronelle High School. "We have them build a project and they just kind of get a feel for, get their foot in the door, see if it's something they want to pursue. And we do end up hiring a lot of those kids and getting them into the program" (N. Stepan, personal communications, May 28, 2021). Programs such as AIDT and Outokumpu's co-op program provide incentives for lower income, low-skilled workers to invest in the future of a company and help to improve employee retention. However, it is unclear if these programs help improve incomes in neighboring communities. A lack in data makes it difficult to evaluate the impacts of these policies on neighboring communities.

Another reoccurring theme that was discussed across several interviews is the impact of the zone program on foreign direct investment (FDI). When asked about the impact of the zone on Mobile's economy, Mr. Rodgers stated that the foreign-trade zone, along with other pro-business policies, "has certainly aided in our abilities to have so much foreign investment in this community" (D. Rodgers, personal communications, May 27, 2021). In his opinion, the progressive and pro-business policies of the region have resulted in the creation of an economic powerhouse in the Gulf of Mexico. "We have more foreign direct investment within our footprint that some states have all together." These policies also have an agglomerating effect on the community. According to Ms. Stimpson, "when we land a company like Airbus that is utilizing an FTZ, we do see the impact from other foreign companies coming in [to Mobile]" (C. Stimpson, personal communications, May 27, 2021).

Statements made by Mr. Rodgers and Ms. Stimpson were mirrored by Mr. Sisson, who stated unequivocally that "so much of that foreign direct investment would not have occurred but

for the foreign-trade zone. And so, there are literally thousands of jobs that you could at least indirectly say it was because of the foreign-trade zone" (B. Sisson, personal communications, June 7, 2021). Sentiments expressed by Chamber of Commerce officials parallel findings from previous studies on foreign-trade zones. Head, Ries, and Swenson (1999) found that foreign-trade zones, along with various pro-business policies, resulted in a significant increase in Japanese FDI and "pronounced agglomerating effects" (p. 216). However, it is unclear if foreign-direct investment has a net positive effect on poverty reduction. According to Magombeyi and Odhiambo (2017), academic literature is unclear as to the general impact of FDI on poverty levels and any conclusions should be made on a case-by case basis. While FDI and training programs are important to an overall net benefit to the local employment, none of the responses provided thus far explain why the poorest neighborhoods border several sites and subzones throughout Mobile. When asked about the effect of the zone on neighboring communities and counties, respondents from the Chamber of Commerce stated that they were unaware of any potential damages to those communities.

When I spoke with Mr. Jones, I described the findings from my national study and asked his thoughts on Mobile. I mentioned to him that my analysis indicated a significant decline in manufacturing firms and overall employment in neighboring counties three years after a zone was approved. He stated, "I would hypothesize that it wasn't the FTZ that made somebody go out of business, it was a technology trend, it could have been a trade trend where this industry, as it was, just couldn't survive." He went on to add, "in terms of, well, somebody got a zone and the neighboring county did not, and their employment decreased, what happened was the folks in one place decided, we're going to adjust to this changing trend of globalization and the other folks said, well we're going to keep doing what we do" (G. Jones, personal communications,

June 16, 2021). In other words, neighboring counties declined because they failed to participate in the foreign-trade zone scheme.

Mr. Jones's argument reflects the sentiments of economists in the early post-NAFTA years. It was not uncommon to hear statements claiming that NAFTA was not to blame but "technological change—with its bias in favor of high-skilled labor—that is the main factor behind these trends" (Lustig, 1997). However, subsequent reports concluded that there were several detrimental effects to certain industry types, specifically the sugar and textile industry, unrelated to technological trends (De La Cruz & Riker, 2014). Both sentiments concerning NAFTA and neighboring effects of foreign-trade zones fall short of explaining the full story. While Mr. Jones's contention may be true for some communities, it would be an ecological fallacy to conclude that every neighboring county that declined in labor and manufacturing did so exclusively because of an inability to adapt.

Even if the argument that a community's inability to adjust to globalization resulted in economic decline is true, it fails to explain the mechanisms behind globalization. Globalization did not occur on its own, and many scholars have contended that current globalization trends are a direct result of trade liberalization or neoliberalism (Cornia, 1999; Harris, 1993; Hillman, 2008; Urata, 2002). In its most basic form, foreign-trade zones are place-based trade liberalization programs. If trade liberalization has resulted in increased globalization, and the zone program is a place-based form of trade liberalization, then one could conclude that Mr. Jones's statements did not refute the question asked of him. In this case, neighboring counties lost firms and employment because they failed to establish a foreign-trade zone, a policy that resulted in a competitive advantage for one county over another. Unfortunately, Mr. Jones did not discuss the

implications for counties neighboring Mobile, and a lack in available yearly economic data around the time the zone was established makes it difficult to conclude either way.

To better understand the impact of the zone program on individual firms, I presented a hypothetical scenario to Mr. Stepan and Ms. Robertson: If the foreign-trade zone in Mobile ended operations tomorrow, what would be your companies reaction? Mr. Stepan suggested that Outokumpu would respond by raising prices on the final project as opposed to instituting layoffs. "I don't think there would be any reduction, there would not be any reduction in production volume or reduction in manpower. It would simply be passed on to the customer" (N. Stepan, personal communications, May 28, 2021). Ms. Robertson had a similar response when she indicated that "we would likely, and this is just my opinion, we would likely look to partner or acquire a domestic source for these items" (M. Robertson, personal communications, July 30, 2021). Under both scenarios, the closing of the zone would not result in layoffs, suggesting the zone program's impact on local employment is negligible.

Environmental and Health Impacts

Initially, the entire purpose of this study was to interview local professionals and gather observational data on the economic impacts of the Mobile foreign-trade zone on the local community. However, it became clear that the zone project may have affected the local community in other ways. Two things stood out as I observed the local landscape and various facilities: (1) the Syngenta facility was completely bulldozed and (2) the local environment around each foreign-trade zone site was under constant pressure from construction projects. While not directly affecting the economic welfare of the local population, environmental degradation can have a profound indirect effect on economic growth in neighboring communities.

The Syngenta facility was in operation since 1966 but did not become a subzone until 1996 (61 Fed. Reg. 5812, 1996; Singer, 2020). It was permanently closed in 2008 due to environmental problems related to discharge (Singer, 2020). The facility is now categorized by the EPA as a superfund site (Environmental Protection Agency, 2017). Today, the entire facility sits empty with only the foundation left in its footprint.

> From the highway, the property is covered by thick forest and can be completely unnoticed. One sign sits at the former entrance in front of a rusted and locked gate. A hidden entrance takes you through a gravel road with rusted road signs. As you make contact with the facility, visions of Chernobyl or a post-apocalyptic film come to mind. The facility is levelled with only the foundation intact. Only the locked barbed-wire fence and a single guard office stands, as if a boundary still exists to an uninhabited country destroyed by its own ineptitude (Field notes 29 May 2021).

The description of this former agrochemical compound does not give it justice. A single sign sits at the entrance to a gravel parking lot stating “park at your own risk.” The rusted fence to the defunct facility is closed to the outside world by a new gate sealed with chains and a padlock (Figure 22).

Figure 22. Defunct Syngenta Facility in Lemoyne, Alabama

Note. Personal photographs (29 May 2021).

The Syngenta facility is not the only site in the Mobile region to be contaminated by industrial waste. In 2008, Mobile Gas Company, located in foreign-trade zone Site No. 1 in Prichard, leaked mercaptan into the surrounding terrain. Instead of reporting directly to the National Response Center, as directed by law, Mobile Gas hired a third party to dig a hole approximately 60 cubic feet to hide the spill from authorities (Raines, 2019). Two years after the Mobile Gas spill, Millard Refrigerated Services, located inside Site No. 7 along the Theodore Industrial Canal, experienced hydraulic shock, which resulted in the release of approximately 32,000 pounds of ammonia into the surrounding area. One employee was injured and 143 contractors were exposed. Thirty-two of those exposed required hospitalization (CSB, 2015).

The foreign-trade zone houses an extensive number of petrochemical companies with varying environmental track records. The impact of these firms and the removal of local habitats to make space for port infrastructure has had some damaging effects on the ecosystem. For example, in 1943, the Theodore Industrial Canal was dredged by the U.S. Army Corps of Engineers as an access point for World War II munitions. The depth of the canal was deepened to 40 feet during the late ‘70s and early ‘80s to allow larger vessels passage to industrial

producers (Thompson, 2019). As a result, local wetlands were affected and the Alabama Port Authority was commissioned to mitigate potential damages. In 1996, the Port Authority designated a 200-acre plot of land approximately 0.7 miles west-southwest of the canal as a Wetlands Management Area. The Muddy Creek Wetlands project restored the ecosystem by removing invasive and exotic plants species, replacing them with local longleaf pines and native grasses (Alabama State Port Authority, 2013).

Given the success story of the Muddy Creek Wetlands, one might expect quality wildlife management surrounding the remainder of the canal. However, field observations provided a different story. On May 26, I arrived at a local fishing spot on the northern end of the canal, just 150 feet west of Rangeline Road. This entire area falls within foreign-trade zone Site No. 7 and is bordered by Ineos Phenol to the south, Greenfield Environmental Multistate Trust to the North, and the Theodore Industrial Facility to the east. The fishing spot is largely ignored by the Port Authority and garbage litters canal (Figure 23). I spoke with two local fishermen about the environmental state of their favorite fishing spot. The eldest of the two men stated he had been fishing in this location for more than thirty years. Until recently, he worked with other fishermen to keep the area clean of litter. However, recently this particular location has degraded further and has been ignored by the local Fish and Wildlife Service (Field notes 26 May 2021).

Figure 23. Litter Collected Along the Coast of the Theodore Industrial Canal

Note. Personal photographs (26 May 2021).

During conversations with the two fishermen, two large dredging pipes were being transported up the canal toward the Evonik facility to the west. One of the fishermen stated he had worked on the canal as a dredger for years and was familiar with the process. He said that the dredging pipes were being used to widen and deepen the canal to provide access for ocean-going vessels to transport materials to Evonik and Mitsubishi (Field notes 26 May 2021). This statement, however, could not be confirmed. When asked about the Theodore Canal the following day, Mr. Rodgers stated that it is "a staging area for right now" and the dredging pipes were "probably just a maintenance thing. They maintain that one at 40 feet. They're deepening the main channel [adjacent to the Port of Mobile] all the way to downtown Mobile from 45 to 50 feet and they'll increase it over 100 feet [wide] so they can have two-way traffic" (D. Rodgers, personal communications, May 27, 2021). According to George (2021), the Mobile channel project is part of a 4-year modernization plan developed by the Army Corps of Engineers. The recently approved engineering project provides $365.7 million to increase the width and depth of the channel and expand dock space. While not directly responsible for the channel project, the

foreign-trade zone has had an impact on throughput and cargo tonnage in the port (D. Rodgers, personal communications, May 27, 2021).

Its expansion projects like this that help the local economy but can also have a detrimental effect on aquatic and marine life and reduce coastal resilience. After my conversation with the fishermen, I spoke with a naturalist who works for a local non-profit about the impact of the port infrastructure on coastal processes. She wished to remain anonymous and will be referred to as Susan Smith. One of her biggest concerns was the impact of seawall wave refraction on the estuary. According to Ms. Smith, "approximately 35 to 40 percent of Mobile Bay is hardened" and those hardened shorelines

> Impact the environment in a way that refracts wave energy and therefore it channels and causes erosion to the immediate intertidal area where the waves crash the shore. And by deepening those areas, sunlight is not allowed to penetrate through the water and the creatures and grasses and vegetation that live there can no longer live there. And so, you lose a lot of habitat by hardening a shoreline. And so, all of our commercially important and economically important fish species and fisheries, shrimp crab, fin fish, recreational fishing, charter fishing, all of those things become impacted because all of the species at some point in their life need the marsh to live (S. Smith, personal communications, May 28, 2021).

By hardening the shorelines and increasing the depth, shipping may increase in the port but it can cost the local economy in very important ways. Regional wildlife depends on natural shorelines "for several things and a lot of the most important things are the transition from the water to the land, an ecotone, and ecotones are where you find the most biological diversity" (S. Smith, personal communications, May 28, 2021).

While not a direct result of the foreign-trade zone, the program has been a factor in the growth of shipping in the port. Deepening and widening the channel and further hardening the shoreline is a direct result of the growth in maritime trade. While this project can be beneficial to trade, it may also negatively impact fisheries in the region. According to a 2013 report from the Alabama Cooperative Extension System, commercial fishing accounts for 20.9 percent of Mobile County's total agricultural output. This amounts to approximately $90.7 million a year and 1,859 jobs (ACES, 2013). This industry faces harm from the expansion of the channel, as "two-way traffic could potentially cause crosswakes to come in at two different angles, which would more than likely increase erosion" (S. Smith, personal communications, May 28, 2021).

Issues with litter along the Theodore Canal and disruptions of habitats in the estuaries are not the only environmental concern surrounding the Mobile foreign-trade zone. Various industrial material companies such as Zenith Energy, Shell Chemical, Plains All American Pipeline, Kimberly Clark Corporation, and Vulcan Materials sit along the northern end of Site No. 1 on both sides of the Mobile River. Biproducts from the production of pipelines, petroleum products, agrochemicals and construction aggregates can leak into the surrounding ecosystem and have a devastating impact on wildlife and the local population. One particular area of concern is the community of Africatown. Named for its original settlers, Africatown was established after the Clotilda, a slave ship, landed in the Mobile River in 1860 with 110 West African slaves. The Atlantic slave trade was outlawed 53 years prior and the Clotilda was burned by the slavers immediately after landing (Zanolli, 2018).

Today, Africatown is wedged between Chickasaw to the north, Prichard to the west, Mobile to the south, and various industrial producers to the east. Throughout its history, Africatown has dealt with various problems including environmental contamination, health

problems associated with pollution, and systemic inequalities. According to Tabor (2018), problems began when International Paper opened a mill in the community. Initially, the mill hired local residents, provided substantial income to the community, and boosted the local economy. Over time, other paper companies migrated to the region and settled near International Paper. By 1992, both International Paper and Scott Paper Co. benefited from foreign-trade zone policies. That same year, both companies released a combined 686,000 lbs. of chloroform into the air. Around the same time period, local residents reported a rise in cancer cases.

On June 9, 2021, I spoke with local independent journalist Chris Harress about his investigations into the Mobile foreign-trade zone. He has recently expanded his scope of inquiry into links between foreign-trade zones and cancer. According to Mr. Harress, the zone "in Mobile near Africatown, there's still large industry up there. There's a paper mill; there's a ton of chemical companies and they're all right on the doorstep of people's homes. […] These people have got lots of incredible stories to tell about decades and decades of corporate abuse against them and no one is ever listening" (C. Harress, personal communications, June 9, 2021). To Mr. Harress, the link between corporate abuse, environmental injustice, and foreign-trade zones are inextricably linked together. However, it should be understood that the foreign-trade zone was not the reason these paper mills migrated to Africatown. The zone was not established until 1983, fifty-four years after International Paper opened its first mill in the community (Tabor, 2018).

Shortly after our discussion, Mr. Harress published an article giving a detailed account of the impact of heavy industry in Africatown. According to his investigation, the paper mill has left a major footprint in the community resembling "a desolate industrial wasteland" (Harress, 2021). High rates of cancer in the community forced a group of residents to file a lawsuit against

International Paper in 2017. The lawsuit contends that dioxins and furans released by the company exceeded EPA limits and resulted in the abnormal rates of cancer in the community ("Africatown Residents Fight Industrial Pollution," 2018). Both parties reached a settlement plea in May of 2020 and International Paper agreed to pay plaintiffs between $250 and $5000 (Wilkerson, 2021).

The foreign-trade zone in Mobile has provided multinational corporations with a competitive advantage and is a powerful tool for the local Chamber of Commerce in attracting businesses to the local area. However, it has had an indirect impact on the environmental health of the region. The increase in throughput and maritime traffic along with the building of sea walls and deepening of the channel has resulted higher rates of coastal erosion and the removal of marine life on along the floor of the channel (S. Smith, personal communications, May 28, 2021). The zone has also provided benefits to industrial firms that have released various chemicals into the local water system and emitted pollutants into the air. Of these locations, minority communities like Africatown have been especially affected by these industries (C. Harress, personal communications, June 9, 2021). While a causal relationship cannot be concluded based on the testimony included in this dissertation, Ms. Smith and Mr. Harress believe that the zone is part of a larger pro-business agenda that often overlooks the adverse effects of these policies on the ecosystem and minority communities adjacent to the zone.

Borders and Security

Another aspect of the foreign-trade zone in Mobile is the concept of borders and security. Each foreign-trade zone site in Mobile is surrounded by barbed-wire fencing and security checks are performed at each employee/guest entrance. Observations provided some context for the security operations of each location, which was largely standardized across locations. The largest

site location, Site No. 1 located next to the Port of Mobile, contained various non-industrial firms adjacent to zone-related firms. Even though these non-industrial firms are located within the zone, they are not considered as part of the zone (Field notes 24 May 2021). According to Mr. Jones each firm "is responsible for making sure that its site meets the security requirements" (G. Jones, personal communications, June 16, 2021). Therefore, each site location is a patchwork of securitized boundaries with barbed-wire angled at a 45-degree angle outward toward the surrounding community.

As described by Mr. Jones, these security measures are designed to make sure that materials do not leave the facility without meeting duty regulations (G. Jones, personal communications, June 16, 2021). While minimum standards are required for every zone-related facility, many firms go beyond what is required by the CBP. Signage is often used to convey warnings to visitors and remove liability from damage to vehicles. However, the toughest security measures are not placed around freight entrances where goods are regularly transported in and out of each facility. The placement of barbed-wire angled outward and security guards at employee entrances gives the perception of security but does little to keep merchandise from leaving. One glaring example of this contradiction is the Evonik Subzone 82B, and enclave within Site No. 7 in Theodore. A security guard checks identification at the entrance and directs traffic. However, the freight entrance (west gate) is open with no security guards on staff (Field notes 26 May 2021) (Figure 24). If theft and smuggling were the primary security concern, then the west gate would be heavily guarded.

Figure 24. Photographs of Evonik Subzone 82B in Theodore, Alabama

Note. Personal photographs (26 May 2021).

Borders and security are concrete realities of the foreign-trade zone where space is clearly demarcated. However, these borders produce a public perception of secrecy and difference, an abstraction of space. The effect of boundaries on the psyche permeates beyond the utility of security and into the mental understanding of space. While these boundaries act as a unifying force within the zone, they can result in division and tension between space (Valsiner, 2014). In another contradiction, these boundaries provide clear directions on the control of space but heighten ambiguity by offering different levels of security on various forms of product flow (Marsico, 2011). Demarcated barbed-wire boundaries create a perception of *other* without a clear definition of purpose and perception plays a major role in the effect these zones have on the community.

When I first arrived in Mobile, I spoke with a government and economic development expert familiar with the Port Authority. He wished to remain anonymous and will be referred to as Matthew Weaver. While not a formal interview, we discussed the relationship between Port Authority, local government, and the community at-large. He described the culture of secrecy surrounding the Port Authority and warned me that it would be difficult to schedule interviews.

Surprisingly, Mr. Weaver was unfamiliar with the foreign-trade zone and its impact on the local economy (Field notes 23 May 2021). While seemingly separate statements from Mr. Weaver, both are connected to the nature of borders and security surrounding the zone program in Mobile.

Mr. Harress had similar opinions when he argued that problems associated with the Port Authority had "been built up over decades to create this culture of secrecy that just exists in the fabric of the Alabama port authority" (C. Harress, personal communications, June 9, 2021). He claimed that the culture around the port hit a crescendo during the tenure of Jimmy Lyons, former Port Authority Director and CEO. According to Mr. Harress, Mr. Lyons used his power over trade and development in Mobile to prevent any changes to the structure of the organization and its role in the community (C. Harress, personal communications, June 9, 2021).

Comments from Messrs. Weaver and Harress prompted me to contact John Driscoll, the newly appointed Port Authority Director, to discuss the role the Port Authority plays in local economic development. I sent two separate emails to Mr. Driscoll but did not receive a response. Nine days after the first email, I received a follow-up email from Judith Adams, Vice President of Internal/External Affairs at the Port Authority. Ms. Adams provided standard boilerplate information and suggested I speak with Greg Jones (J. Adams, personal communications, June 3, 2021). When I responded by stating that I am interested in the relationship between the Foreign-Trade Zone, the Port Authority, and local economic development, she again recommended I speak with Mr. Jones and suggested I contact the Mobile Chamber of Commerce (J. Adams, personal communications, June 4, 2021). We did not have any further communications.

Borders and security surrounding the foreign-trade zone in Mobile are indicative of a culture of secrecy surrounding the zone and Port Authority. The hidden machinery behind the port and zone program, and difficulty in receiving accurate data on both programs, can have a

major impact on the local community's understanding of their role in local development and governance. Early in my investigation, I discovered that local residents living near the zone were unaware of its existence. Various people working in neighboring businesses were aware of the industrial firms that neighbored their community but knew nothing of the program that was part of the city's pro-business policy framework. One individual who worked at the Shell gas station on Michigan Avenue next to the Brookley Complex said she knew about firms such as Airbus and their impact on employment in the region but had not heard of the foreign-trade zone. She mentioned to me that she thought the industrial complex was controlled by the Port Authority (Field notes 23 May 2021). The culture of secrecy around the Port Authority and the border security around the zone had created a sense of ambiguity from the community.

Security, boundaries, and secrecy can have a profound psychological and economic impact on the surrounding community. Borders can result in a separation between two or more groups of people, shape the conduct of individuals, and adjust value systems on both sides of the boundary (Español, Marsico, & Tateo, 2018). Resulting "us" versus "them" mentalities not only apply to national borders but can be seen on the ground at a local level. Giant structures and complexes in the foreign-trade zone are outfitted with industrial-grade fencing, upgraded infrastructure, proper lighting, newly paved roads, and cemented sidewalks (Field notes 24 May 2021). However, infrastructure less than one mile away is poorly maintained. At the time of Mayor Sandy Stimpson's election, Mobile had a backlog of $250 million in infrastructure maintenance projects yet to be undertaken (Monks & Vajjhala, 2017). There is a glaring difference in both landscapes and more attention has been placed on big business in the foreign-trade zone than surrounding neighborhoods. As stated by Mr. Harress, "those communities are

not doing great. Their roads don't get resurfaced [and] there's lighting issues on some of the streets" (C. Harress, personal communications, June 9, 2021).

The clear emphasis placed on large firms and not on local neighborhoods can having a lasting impact on the community. According to Marsico and Tateo (2017), the buffer zone created along these boundaries can limit the development of society. These buffer zones reduce the interaction of people between zones and can result in the hardening of differences across space. The clear distinction between the foreign-trade zone, which geographically guards the Port Authority from outside interference, and the neighboring community can further exacerbate inequalities. Indeed, the placement of national boundaries results in inherent inequalities between bordering states (Kanbur, 2018). Using observations on the ground, available data from the Census Bureau, and information provided by Mr. Harress, clear inequalities can be seen along the Mobile foreign-trade zone boundaries.

The modern borders of the foreign-trade zone reflect large-scale national borders as tools to "selectively police certain transnational flows" (Deleixhe, Dembinska, & Iglesias, 2019, p. 642). Quite literally, the boundary between the zone and neighboring communities is designed to police the flow of certain people and goods through security. Of course, it is a supreme irony that in the case of the foreign-trade zone, intended to remove tariffs intended for re-export, borders have been used to separate the domestic population from zone activities while removing trade barriers between firms and foreign commerce. As a result, people are either unaware of the zone's existence or prefer to avoid inquiry. This has allowed the foreign-trade zone and the Port Authority to operate without public scrutiny, providing tax benefits and quality infrastructure at the expense of the surrounding population.

Conclusion

The foreign-trade zone in Mobile has evolved dramatically since its inception. First proposed in 1937 (Jones, et al., 1941), in hopes to boost trade and make Mobile a leading shipment hub in the Gulf of Mexico. The initial manifestation of the zone had a short tenure and was abandoned by Governor Frank Dixon just two years later (General Acts of Alabama, No. 12, H. 59, 1939). In 1982, the City of Mobile would submit another application for a zone and the Foreign-Trade Zone Board would approve it the following year (47 Fed. Reg. 992, 1982; 48 Fed. Reg. 9052, 1983). Today, the zone program has played a major role in maritime trade in the region and across the state of Alabama. In 2020 alone, the zone received between $1 billion and $5 billion worth of merchandised and employed between 1,501 and 2,000 people (Raimondo & Yellen, 2021). For this reason, David Rodgers commended the program as an important "tool in our tool box that has […] aided in our abilities to have so much foreign investment in this community" (D. Rodgers, personal communications, May 27, 2021).

While not the original intention of this research, it became apparent that foreign-trade zones, at least on the local level, exemplify the modern American capitalist system. Duty deferrals are provided in such a way that big business is the primary benefactor. In the words of Christina Stimpson, "it's really the bigger companies that are going to have the resources to take advantage of it" (C. Stimpson, personal communications, May 27, 2021). While Mr. Rodgers and Bill Sisson agreed with Ms. Stimpson, Greg Jones stated unequivocally that the zone program benefited firms of various sizes. To prove his statements, he referred to a summary paper he sent to me on an earlier date. However, this document listed only eight firms within the zone, of which only one is considered a small business (Jones, 2021). Observations on the ground tend to support statements from Chamber of Commerce officials.

Additionally, each interviewee agreed that the zone program provided a net benefit to the city by increasing transnational shipments, throughput, and FDI. However, research is inconclusive has to whether or not FDI can alleviate poverty at a local scale (Magombeyi & Odhiambo, 2017). Chamber of Commerce executives and Mr. Jones also argued that the zone program provided a net benefit to local employment through the attraction of firms like Airbus, MH Wirth, Aker, and Austal. Unfortunately, each of these firm require a highly skilled labor force, skills that require years of training. According to Mr. Jones, the AIDT program has been beneficial to local residents and provided much needed training in the industrial sector (G. Jones, personal communications, June 16, 2021). On the other hand, observations provided little evidence of spillover into neighboring communities, as the worst infrastructure in the city occurred in neighborhoods adjacent to the Brookley Industrial Complex. Census data reflects this phenomenon, as the average incomes for neighboring block groups were $19,719 below Mobile County median household income (U.S. Census Bureau, 2021).

Jobs, throughput, and FDI are not the only way the zone affects the community. Statements from Susan Smith provide evidence that the continued growth of the zone and port infrastructure can result in increased erosion and degradation of the Mobile estuary by displacing marine and aquatic habitats (S. Smith, personal communications, May 28, 2021). This can have a direct impact on fisheries in the region, a major source of income for both large and small commercial fishing companies. Other environmental concerns such as chemical leaks and the release of pollutants have adversely affected neighboring communities. Particularly egregious examples have occurred along the Theodore Canal and in Africatown. Another important environmental concern is the attraction of petrochemical companies to the zone. The former Syngenta facility sits as a reminder of potential environmental impacts. Chemical leaks and the

release of pollutants can have long-term health impacts on the community and result in declining productivity.

Providing benefits to a small group of big business and enabling negative environmental degradation is only further reinforced by the secretive nature of the zone program and Port Authority. Fenced boundaries around these facilities evoke a sense of extreme security and curtail local inquiry. The creation of artificial boundaries makes a public statement to corporations that 'you are protected' and results in an 'us' and 'them' division where one geographic space is well funded and another is not. Of course, the secretive nature of the zone and port infrastructure has permeated the business culture of Mobile, as people who work in local development warned me not to expect much of a response from the Port Authority in my requests for interviews.

The zone program is indicative of government and business relations at the national level. Pro-business policy, such as the foreign-trade zone, often provides competitive advantage to large transnational corporations at the expense of the small business. As a result, firms hire more employees, but the impacts do not trickle down to neighboring poor communities. Often these firms have negative environmental impacts, of which poor and minority communities are most affected. Finally, to ensure the protection and stability of the current system, a series of security safeguards are established to hinder public scrutiny. While the Mobile foreign-trade zone is a minor policy in the larger pro-business framework of the region, it has had played a pivotal role in the local economy.

CHAPTER V: DISSERTATION CONCLUSIONS

The foreign-trade zone program has become an integral part of U.S. domestic economic and international trade policy since its establishment in 1934. A type of place-based neoliberalism, foreign-trade zones were initiated during a period of great upheaval and were presented as a means for promoting peace and boosting international trade. As stated previously in this dissertation, the zone program is a spatial reflection of neoliberal trade policy, in that it provides free trade benefits to a select group of firms while others are forced to conform to national tariff policy. A contradictory program, each zone is a free-market area imprisoned in space. Accordingly, the foreign-trade zone is located within the boundaries of the U.S. but "is not part of the United States" (*Foreign-Trade Zones*, 1948, p. 5). The state has used its power to partially denationalize territory for the benefit of the few. In a collaborative effort, state and corporate power has coalesced to create a program that has largely benefited the same industries that supported its initial manifestation. Evidence presented in this dissertation suggests this collaborative effort has resulted in the supremacy of big business within the zone program, significant clustering of zones in a few wealthy urban centers, spatially uneven development patterns, net economic losses for neighboring counties, and negative external effects on neighboring communities.

Throughout the earlier years of the free port and foreign-trade zone debate, prominent industrialists including Austin Corbin, Charles Pratt, William G. McAdoo, Alfred I. du Pont, and William P. Bonbright, along with major business organizations such as Merchants' and Manufacturers' Exchange of New York, Civic League of Staten Island, Merchant's Association of New York, and various Chambers of Commerce worked closely with several bureaucratic agencies to build the case for congress. Using their influence and relationships with members of

congress, including G. Murray Hulbert, Wesley L. Jones, and Emanuel Celler, these individuals and groups implemented a strategy for creating the zone program. By flooding congress with bills, changing the name to foreign-trade zones to "take that curse off the word 'free port'" (Morris, 1939), and taking advantage of a major financial and economic crisis, supporters were able to effectively achieve their goals. As a result, the zone program became dominated by a small group of major industrial producers and investment firms, many of which planned and supported the program in the beginning (see Ross & Mnuchin, 2019; *Rockefeller Group International, Inc.*, 2020). In addition, foreign-trade zones have been predominantly established in metropolitan centers and significantly clustered in the northeastern U.S. after 2000 (see chapter 2).

After evaluating the historical and geographical evolution of foreign-trade zones, certain trends in their spatial arrangement became clear. Results from the analysis performed in chapter 3 indicate that foreign-trade zones are a significant predictor for spatial patterns of median household income, unemployment rates, and manufacturing firms. Findings for the temporal analysis suggest that foreign-trade zones have no significant impact on short-term growth rates of median household income, unemployment rates, manufacturing firms, manufacturing employment, nor long-term impact on median household income. Zones did have significant long-term impact on manufacturing employment; however, adjacent counties witnessed significant long-term increases in unemployment rates and significant long-term declines in the number of manufacturing firms. Together, quantitative results suggest that foreign-trade zones may have an impact on spatially uneven development patterns across the country and result in a net reduction in total employment and manufacturing firms in neighboring counties. While there are positive impacts on manufacturing employment in counties establishing a zone, it is likely

that manufacturing firms move away from neighboring counties or close operations in the long-term.

To evaluate the effect of the zone program on the local scale, I performed observational research and interviewed various political and business professionals knowledgeable of the foreign-trade zone in Mobile, Alabama. Results from chapter 4 indicate that Zone No. 82 has had, at least in the opinions of interview respondents, a net benefit on throughput, foreign direct investment (FDI), and employment in the Mobile region. However, very little evidence was found indicating a positive effect on small business. As stated by three different respondents, the zone program primarily benefits big business due to the regulatory barriers required by the Foreign Trade Zone Board. Observational data suggest very little spillover into the neighborhoods bordering the zone. Additionally, information collected from an environmental specialist familiar with the zone program and shipping in the area indicates that the positive impact of the zone on throughput has had a negative impact on the estuary in general and fisheries in particular. The zone has also been associated with chemical leaks and pollution, which have adversely affected neighboring minority communities. These findings suggest that the zone program in Mobile has benefited the business community at-large but in the process, other parts of the community were adversely impacted by the program.

Contributions to the Field of Geography

These findings contribute to the field of economic geography and the study of uneven development in a novel way. Research on foreign-trade zones has been dominated by the fields of business and economics, and few researchers have approached the study of the zone program as a catalyst for uneven development. Previous research on the developmental effects of foreign-trade zones have found that these zones have a significant impact on FDI, agglomeration

economies, and spillover into non-manufacturing firms (Ghosh, Reynolds, & Rohlin, 2016; Head, Ries, and Swenson 1999; Koo 2005). However, these studies did not approach the study of foreign-trade zones using a mixed method approach.

The combination of the historical analysis, quantitative analysis, and case-study suggest that foreign-trade zones may provide a net benefit to a small group of companies and large urban centers, but negative effects in neighboring counties may result in increasing levels of uneven development across the country. Along with uneven development, localizing affects may exacerbate environmental damage in some respects. Contrary to statements made by a Congressional Research Service report claiming foreign-trade zones "may help to maintain U.S. employment opportunities and the competitiveness of U.S. producers" (Bolle & Williams, 2012), findings discussed in this dissertation suggest a more nuanced relationship between the zone program and economic development.

While establishing a zone may increase FDI, boost throughput, and promote local economic development, neighboring counties are not seeing the same benefits, and in some cases are negatively impacted by the zone program. For the zone program to continue, these issues need to be addressed by local policymakers and the Foreign-Trade Zone Board. While public hearings for general-purpose zones are held to address grievances, subzone applications do not require public input (15 C.F.R. § 400.27, 2012; Kanellis, 1995). Additionally, hearings are rarely major news items, so neighboring counties may not be aware that a zone is being considered. Public hearings should be extended to subzone approvals, more awareness should be raised regarding these hearings, and neighboring counties should be invited to attend. The external costs to adjacent communities should also be addressed. Many of these zones are located in urban centers near port infrastructure and low-income housing. Because the program often

results in agglomeration of industrial producers, adjacent communities are often burdened by increased environmental degradation and pollution from these industries. Clear reporting and presentation of cost-benefit analyses should be provided to members of the neighboring communities.

Ultimately, the problem lies in the program itself. Designed to boost international trade and economic output, foreign-trade zones have had some impact on spatial inequalities on the local and national scale. Additionally, the zone program has largely benefited big business at the expense of their small business competitors. While many communities, Mobile included, have separate programs to promote small business, no place-based federal program at the scale of the foreign-trade zone program exists nor does the Foreign-Trade Zone Board actively promote the program to small business. At the very least, this oversight needs to be addressed by congress and elected officials should take a more active role in policing the program. Structural changes should be made to ensure that the wealthy few are not benefiting at the expense of the many.

Limitations

Information presented in this dissertation were gathered from various governmental and corporate sources, reflecting the reliability and availability of data at the time of study. During the data gathering period of this dissertation, the global SARS-Cov-2 pandemic resulted in governmental shutdowns of various institutions such as the Library of Congress and National Archives. The closure of these facilities resulted in an overdependence on digital archives provided by various online websites and hampered the availability of data. Additionally, many foreign-trade zone related firms were closed to the public, making it impossible to observe operations within each facility. Other issues arose such as the data provided by the Foreign-Trade Zone Board on its Online FTZ Information System (OFIS) and in its yearly reports. As

discussed in previous chapters, the OFIS website provides an immense amount of information but does not include output data from individual companies and subzones. After 2010, yearly reports to congress no longer included values for subzones, adding these values to general-purpose zone statistics. This resulted in highly approximated values based on ranges of outputs and inputs. For example, Zone No. 2 general-purpose zone in New Orleans received $759.8 million and subzone 002H received $1.61 trillion in foreign merchandise in 2010 (Locke & Geithner, 2011). However, the data was combined in 2011 and estimated as >$100 trillion worth of total merchandize received for the entire zone (Bryson & Geithner, 2012). Therefore, the lack in available digital archival data, the inability to observe zone operations in-person, and a change in data aggregation by the Board should be considered a limitation.

Other limitations include the reliability of firmographic data provided by Infogroup. Various authors have determined that the reliability of these data is highly dependent on urbanicity and the type of firms included in the analysis (Lucan et al., 2013; Mulrooney et al., 2021). Additionally, data used in chapter 3 only included a limited time-scale. Because the spatial analysis focused specifically on 2016, results do not explain historical patterns in uneven development. Due to a lack in available historical data provided by the American Community Survey (ACS), a comprehensive temporal analysis could not be performed on county-level economic growth patterns prior to 2009. Future analyses should be performed using data available at different temporal and spatial scales to validate these findings.

Recommendations for Future Research

To better analyze the historical growth patterns of foreign-trade zones and critically evaluate the individuals who were involved in the program, future research should include physical archival data provided by the National Archives and Library of Congress once those

facilities reopen to the public. To validate results from the quantitative analysis, future research should analyze data at the census tract and block group scale. Findings at these scales may provide different results, allowing for a better understanding of the localized impacts of the zone program. Additionally, neighboring firms and residents should be surveyed to analyze the impact of these zones on the neighborhood scale.

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