OUTCOMES OF FDI IN MISSISSIPPI: THE CASES OF NISSAN AND TOYOTA

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ABSTRACT

CAYLA CARDAMONE: Outcomes of FDI in Mississippi: The Cases of Nissan and Toyota (Under the direction of Dr. Milorad Novicevic)

My original motivation for selecting this topic for my Croft thesis was to examine an issue that is of community relevance in Mississippi and could reveal how multiple global regions intersect and affect the quality of life in Mississippi. Guided by this motivation, I decided to examine whether the expected effects of Japanese FDI projects in Mississippi have been achieved in terms of job creation relative to both job quantity and job quality. My particular analytical focus has been on the job-creation effects of the Nissan plant in Canton and the Toyota plant in Blue Springs. For my analysis, I used publically-available county level data that I sourced from the Bureau of Labor Statistics with the objective of comparing the employment levels and average annual wages in the counties where the plants are located before and after their openings. I found that direct job creation from the plants was properly estimated, while indirect job creation was overestimated. This has contributed to a lower net employment effect than projected, although the two plants have created higher paying jobs in the counties where they are located. Other research has found that investment in human and physical capital is a more effective way of increasing employment than paying incentives to attract firms. Therefore, to ensure that future foreign direct investment creates stable, quality jobs, the Mississippi state government should balance its investments in education and infrastructure with incentives designed to attract foreign investments from diverse industries.

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CHAPTER I: INTRODUCTION

Background

Globalization of the United States' economy, which is commonly believed to contribute to the significant loss of jobs performed by low-skilled labor through outsourcing, has become a widely-debated topic at both the national and state level. The debut peaked during the 2016 presidential campaign, when both Republican and Democratic candidates alike criticized free trade and outward foreign investment for their roles in diminishing United States manufacturing. In response, the government has recently undertaken protectionist actions, such as withdrawing from the Trans-Pacific Partnership, with the goal of safeguarding jobs.

The debate and withdrawal have overshadowed the relevance of Foreign Direct Investment, or FDI, as an alternative way to create jobs in the United States and increase employment, particularly within the manufacturing industry. Federal and state governments have been devising policies to attract FDI and contribute to the employment of high-skilled labor whose jobs will replace quantitatively and upgrade qualitatively those lost through outsourcing. In this thesis, I will assess the job creation affected through exemplary FDI cases of Nissan and Toyota in Mississippi. For this examination, I will adopt the International Monetary Fund's definition of FDI as follows,

> "A category of international investment that reflects the objective of a resident in one economy (the direct investor) obtaining a lasting interest in an enterprise resident in another economy (the direct investment enterprise). The lasting interest implies the existence of a long-term relationship between the direct investor and the direct investment enterprise, and a significant degree of influence by the investor on the management of the enterprise. A direct investment relationship is established when the direct investor has acquired 10 percent or

more of the ordinary shares or voting power of an enterprise abroad" (Carson, 6-7).

FDI in the United States

FDI received new focus under the last federal administration with the creation of the federal organization SelectUSA that placed importance on FDI as a source of job creation. SelectUSA, which is "designed to market the U.S. to overseas investors while helping them navigate federal, state, and local regulations," (Miller) hosts an annual summit where foreign business leaders network with federal and state government officials and development organizations with the goal of fostering new investments. This networking is supported by the SelectUSA website, which is designed to clarify federal rules and regulations and provides information to companies regarding the incentives offered by various local governments. By creating connections between new investors in the United States and local communities, "SelectUSA has facilitated more than $23 billion in investment, creating and/or retaining tens of thousands of U.S. jobs" (SelectUSA).

The United States has attracted more FDI than any other country in the world, primarily owing to its open market, relatively stable financial system and economy, and favorable investment climate. Specifically, FDI accounted for 23 percent of GDP in 2011 (Kornecki 2), while cumulative FDI in the United States totaled $2.9 trillion in 2014, where new investments totaled $112 billion in 2014 alone. The United Kingdom is responsible for the largest percentage of cumulative FDI in the United States with 15 percent, but Japan closely follows, with 13 percent through 2014. The remaining FDI in

the United States mainly comes from the Netherlands, Canada, Luxembourg, Germany, Switzerland, and France (Foreign, 1-3).

FDI in the manufacturing industry, which accounts for the largest source of FDI in the United States, amounted to more than $1 trillion in 2014, or "more than one third of cumulative foreign direct investment." Within the manufacturing sector, "the transportation equipment industry, comprised mostly of auto and auto parts manufacturing, amounted to $110 billion through 2014," topped only by the manufacturing of chemicals. The manufacturing of motor vehicles accounted for more than $74 billion of cumulative manufacturing FDI in 2014, whereas the wholesale trade of motor vehicles accounted for another $60 billion of cumulative FDI in 2014 (6-Appendix B).

The Southeast Automotive Core, or SEAC region, is a hotbed for auto-manufacturing FDI in the United States. The region, which includes Alabama, Georgia, Mississippi, South Carolina, and Tennessee, hosts eight of eleven "New Domestic" light vehicle assembly plants that have been constructed over the last twenty years. The term "New Domestic" refers to the multinational auto manufacturers that operate North American assembly plants, such as Toyota, Honda, Nissan, and Volkswagen (Jacobs, 199). When these multinational corporations consider a new investment, they scrutinize factors such as availability of potential sites, manufacturing density, wage rates, unionization and right-to-work legislation, unemployment rates, transportation infrastructure, tax rates, and government-sponsored incentive packages (Coughlin, 677-680).

The SEAC region's success in attracting these large FDI projects can partly be attributed to low property and business taxes, infrastructure giveaways and incentive packages, right-to-work laws and nonunionized labor, combined with aggressive marketing tactics conducted by local and state governments (Jacobs, 200). Government officials in this region have intensely recruited auto-related FDI in the form of manufacturing plants with the goal to bring high-skilled jobs to their states, and thus compensate for the outsourcing or elimination of low-skilled textile and apparel manufacturing jobs lost over the past couple of decades. As the SEAC region is generally characterized by low household and per capita incomes and high poverty rates when compared to the rest of the country, FDI is viewed by government officials in these states as an effective way to "improve the economic well-being of their citizens" (201-202).

The government officials from the SEAC region are particularly targeting Japanese multinationals for FDI because "Japan is reemerging as the most important source of foreign direct investment (FDI) in the United States. In 2013, Japanese firms were the largest source of new inflows of FDI into the United States for the first time since 1992, injecting almost $45 billion of fresh investment into the U.S. economy in that year alone." Within the industries attracting Japanese FDI, "motor vehicles are the single largest industry" (Moran, 1-3). As a result, among the top six automotive companies in the United States, three are Japanese; Toyota, Honda, and Nissan (Thompson, 1). Their presence is particularly felt in the states that compose the SEAC. For example, Honda has a manufacturing plant in Alabama, Toyota has a plant in Mississippi, and Nissan has plants in both Mississippi and Tennessee.

Mississippi, the only state to host both Nissan and Toyota plants, has a strong business relationship with Japan. Junji Kurokawa, the chief executive director of the Japan External Trade Organization, speaking at the Japan-America Society of Mississippi (JASMIS)'s summer seminar in July of 2016, accentuated that "the major reasons why Japanese firms are drawn to the Magnolia state … are 'cost competitiveness; vast extent of land, with room to grow; sophisticated infrastructure; customized incentives, and great hospitality.'" The president of JASMIS, Dr. Paul Tashiro, stated, 'we have a very close, good working relationship with the Mississippi Development Authority and with Governor Phil Bryant and former Governor Haley Barbour' (Bailey). These statements illustrate that Mississippi maintains a strong relationship with Japan to bring business and jobs to the state by providing incentives and tax concessions to Japanese companies in exchange. In particular, the Nissan plant in Canton, Madison County, Mississippi and the Toyota plant in Blue Springs, Union County, Mississippi are prime FDI outcomes of the collaboration between Mississippi and Japan that have been expected to have favorable impact on employment in Mississippi.

Introduction to Cases of Nissan and Toyota in Mississippi

Nissan

In 2002, the government of Mississippi offered an incentive package worth $363 million to Nissan in exchange for a promise of creating 5,300 new jobs with the construction of a plant in Canton, Madison County, Mississippi (Lyne) while the government of Mississippi, the government of Madison County, and the Mississippi Department of Transportation pooled funds for this package. The Mississippi state

legislature approved two tax rebates for Nissan, valued at $5,000 each for each direct job created, which would be rebated in the form of corporate income and personal income taxes. The rebates are scheduled to last 15 years (Peavy 9).

State officials estimated Nissan would bring 16,212 direct and indirect jobs to Mississippi by 2005, and that the government would break even by 2007 (Lyne). Production at the plant commenced in 2003 at a 4.7 million square foot facility covering 1,038 acres. The plant represents an investment of $3.2 billion by Nissan and has produced more than three million vehicles since it opened, with the capacity to house 450,000 automobiles at one time. Nissan's plant in Canton, which manufactures eight Nissan models, including the Nissan Altima and Nissan Murano, and employs more than 6,400 people, has had no layoffs since it opened in 2003. Nissan's annual payroll to employees at the plant totals more than $400 million, and the plant has donated $13.6 million to charitable causes since 2003 (Nissan Fact Sheet). Nissan's plant is diverse as its management team is comprised of 46 percent minority managers, whereas its workforce has 62 percent minority workers, with 60 percent of them being African-American (Nissan).

A common topic of discussion addressed within the local and international news is the Nissan plant in Canton's unionization, or lack thereof. For example, the author of an article written in 2009 in the Jackson Free Press, titled "Why Foreign Businesses Dig Mississippi," praises the plant's "positive impact on job creation in and around the city of Jackson," Mississippi's capital, but also expresses concerns about Mississippi's "dismal record regarding employee treatment, including wages." The author points to the "United Auto Workers claim that the wages an employee at the Nissan plant in Canton makes,

compared to wages an employee at the Nissan plant in Tennessee makes, is an example of the state's comparatively low pay," citing a 2006 survey that suggests employees in Canton make around 20 percent less than employees at the Nissan plant in Smyra, Tennessee. However, Mississippi's right to work laws and low wage labor are also considered a significant draw to businesses investing in the state because they are key reasons why the plant is located in Canton. If Nissan had selected another plant location outside of Mississippi, there would have been at least 6,400 less direct jobs in the state.

Nissan is involved in a global auto alliance with Renault, a French auto-manufacturer. Renault holds 43.3 percent of Nissan's shares, while Nissan owns 15 percent of Renault's shares. The complexity of this alliance is increased by the fact that the French government owns 19.73 percent of Renault's shares (Un Groupe Fort). French news articles convey the social concerns of the French government related to unionization, as it has taken it upon itself to monitor the labor relations of Nissan around the world. In Mississippi, French *députés*, or government representatives, have not been satisfied with Nissan's local labor practices after conversing with employees from the plant in Canton and encouraging their unionization efforts. As a result of these conversations, 35 *députés* have recently sent a letter to Nissan's senior leadership voicing their concerns about poor labor relations in this plant. In addition, representatives from the United Auto Workers union recently protested the non-unionization of the Canton Nissan plant at Renault's headquarters in a suburb of Paris (Jannick).

Vermont Senator Bernie Sanders and the actor Danny Glover organized a march to the plant on March 3rd, 2017 "to bring attention to what organizers call poor working conditions at Nissan's manufacturing plant in Canton" ("Bernie Sanders"). The

organizers of the march claim that Nissan suppresses unionization at its Canton plant and does not sufficiently respect its workers, referring to the five citations received by the plant in the last five years from the Occupational Health and Safety Administration and the charges received from the National Labor Relations Board regarding the plant not allowing its workers to wear pro-union clothing (Parrish). However, so far Nissan has not taken action because it claims it is not breaking any American laws through their labor management practices. Specifically, Rodney Davis, the human resources director at the plant, claims that Nissan fully respects its workers' unionization decisions. Since Mississippi's right-to-work laws are one of the factors that attracted Nissan to Canton, it is being claimed its management members have actively discouraged employees from pursuing unionization. The unionization-related provision of Mississippi's labor law, which requires that 30 percent of the workforce sign statements in favor of unionizing (Parrish) before initiating a popular vote of more than 50 percent of employees in favor (Maillard), attracts out-of-state companies because it hampers unionization, driving down costs. However, its unintended consequence is that it might have unfair effects, particularly on the African-American workers that make up the majority of employees at Nissan's plant.

An additional critique of the Nissan plant in Mississippi came from a report commissioned by the United Auto Workers. In this report, it was claimed that the subsidies provided to Nissan will end up totaling around $1.3 billion, well over the $363 million figure that was publicized at the time of the plant's fruition (A Good Deal for Mississippi). This report implies that government officials and the public were not fully informed of the cost and realistic employment effects of the plant in Canton.

Toyota

In 2007, Toyota announced it was constructing an assembly plant in Blue Springs, Mississippi, near Tupelo. The area hosting the plant is known as the PUL region, which is the acronym for the alliance among Pontotoc, Union, and Lee Counties. This alliance was created through state constitutional amendments to share the financial burden of hosting the plant. However, the plant itself is located in Union County. The Toyota plant in Blue Springs is somewhat of a special case (Jacobs), because inter-county collaboration was required to bring Toyota to the Tupelo area. Toyota received $293.9 million in incentives to bring 2,000 direct jobs to the region, in addition to 4,900 supplier jobs and another 1,400 indirect jobs by 2013. Interestingly, the PUL region was not the highest bidder for the plant as Marion, Arkansas was willing to offer higher incentives, but Toyota preferred the site in Blue Springs because of its environmental sustainability due to its location away from the pollution coming from the city of Memphis and because of Marion's flooding concerns stemming from its close proximity to the Mississippi River. When the plant was opened in the Fall of 2011, it was "projected that state and local governments would recoup their incentives investment and its related interest within 17 years" (Jacobs 202-209). The plant that cost Toyota $961 million produces over 170,000 Toyota Corollas each year. Around 1,500 people are currently employed at the facility that is particularly "noted for environmental sustainability, such as efficient use of resources and materials and sending less waste to landfills" (Bailey).

The recent financial crisis heavily impacted the Toyota plant in Blue Springs. The plant was commissioned in 2007 but put on hold in 2008 when a recession hit the United States' economy and car sales fell drastically until 2011, when production commenced at

the plant. In addition, the plant was originally going to produce Hylander SUVs, but that plan was changed when gas prices increased and demand for fuel efficient vehicles increased, leading to a second decision to produce Priuses at the plant instead, before the final decision to produce Corollas ("Toyota to restart"). These decisions show that the plant is susceptible to market fluctuations. Therefore, if there is another economic downturn or major increase in gas prices, it is likely the plant's operations will adjust, indicating layoffs or plant closures are possible.

Like the Nissan plant, the Toyota plant drew disapproval from the United Auto Workers because Toyota decided to close a plant in California and open this plant in Mississippi at around the same time. The United Auto Workers claimed this occurred because labor cost in Mississippi is lower, but Toyota refuted this claim stating the plant in California was closed because Toyota shared the space with General Motors, who decided to leave the plant first ("Toyota to restart"). However, Toyota has not received criticism to the extent that the Nissan plant has, probably because the plant opened after the financial crisis, at a time when any new jobs were celebrated. In addition, as the plant is much smaller than the Nissan plant in Canton, each worker receives more individualized attention. The plant uses innovative assembly line techniques that reduce the strain and stress on workers (Maynard), thus creating more favorable labor conditions. Also, the plant's small size and location further away from the state's capital has contributed to a lower level of interest in the plant. Finally, the plant has not received as much international attention because Toyota does not belong to an alliance involving a government as an actor like Nissan does.

Research Question and Methods

The research question that I address in this thesis is, "Have the expected effects of FDI projects in Mississippi, particularly those of the Nissan plant in Canton and the Toyota plant in Blue Springs, been achieved in terms of job creation and economic payoff?" Given that both plants required years of planning and a significant financial commitment by local governments, it is of high communal and state interest to evaluate analytically whether the plants' projected benefits have been realized years after they began operating in Mississippi. I conducted my analytical evaluation of the actual achieved benefits of these projects taking into consideration the time, effort, and financial investment that they required. Specifically, taking both the perspective of the local governments and that of Toyota and Nissan, I investigated and evaluated whether each of these projects lived up to their respective projected job creation expectations.

The contribution of my analysis is not only unique and valuable but also of high social interest because the public discourse about the effects of the Nissan and Toyota plants as exemplary large-scale FDIs in Mississippi is generally polarized. On the one hand, it is widely acknowledged that these projects have brought thousands of new high-skilled jobs to Mississippi, while, on the other hand, they also cost taxpayers hundreds of millions of dollars. The debate is also polarized whether the analysis should go beyond the direct cost-benefit analysis because it is possible that these projects have spurred related investment in infrastructure and education, thus not only attracting new FDI projects in Mississippi but also creating additional direct and indirect jobs. I take all of these into consideration in my analysis reported in this thesis.

For my analysis, I used county level data sourced from the Bureau of Labor Statistics to see the level of employment in the counties where the plants are located before and after their openings, including employment percent growth over time. I also evaluated employment within the manufacturing industry in these counties, as well as average annual pay for all industries and the manufacturing industry in each of the counties where the plants are located, which I considered my treatment counties. I also examined neighboring counties that do not host an auto manufacturing plant as control groups, using the difference-in-difference method to calculate the gap between percent change in employment and average annual pay in my treatment counties and control counties. I additionally conducted an analysis of the data related to Mississippi's tax revenue, expenditure, and state debt before and after these plants opened. I sourced this data using the Annual Survey of State Government Finances provided by the United States Census Bureau. I also researched available company performance reports related to the plants in Canton and Blue Springs. Based on my analysis, I was able to make inferences about the effectiveness of the government of Mississippi's decision to offer significant incentives and tax concessions to Nissan and Toyota with the objective of attracting these FDI projects.

The goal of this social scientific research is to determine the effectiveness of the state of Mississippi's allocation of resources to these plants and to identify ways in which the government could better spend its tax dollars to better serve the Mississippi community. Following the leadership of Chancellor Jeff Vitter, the Croft Institute for International Studies, and the Sally McDonnell Barksdale Honors College to engage in research of community relevance, I have pursued this research opportunity with the goal

to develop and offer data-supported suggestions that may have relevant policy implications. Once my research is deposited into the University of Mississippi database, it will be available for access by the state of Mississippi's constituents to make their own informed choices.

CHAPTER 2: LITERATURE REVIEW

In this chapter, I discuss prominent studies written regarding the effects of FDI on a national level to determine what the widely-held conclusions are regarding the effectiveness of FDI. I specifically researched studies related to job creation and Japanese FDI to understand the government of Mississippi's approach to investing in these projects. I also examine the consequences of FDI and opinions related to the effectiveness of offering incentives to attract FDI in order to evaluate Mississippi's investments. I conclude my literature review by assessing existing studies on the Nissan and Toyota plants in Mississippi.

Effects of FDI on a National Level

A review of research that has been conducted on Foreign Direct Investment and its positive and negative consequences on economies is provided in "Foreign Direct Investment: A Focused Literature Review" by Olafur Margeirsson. I referenced this work throughout my research to outline the commonly held beliefs regarding the effects of FDI, particularly its influence on economic growth, because I am evaluating whether Mississippi's local economies are experiencing the effects of FDI from the Nissan and Toyota plants as would be expected based on the past studies of FDI outcomes.

Margeirsson focuses his review on the two major forms of FDI; Horizontal FDI and Vertical FDI. Horizontal FDI, the most common type, occurs when a production facility is constructed to produce goods for the economy in which the plant is located, with the goal of bypassing trade barriers such as tariffs or quotas. In the case of Vertical

FDI, only one part of the production process occurs at the project site, while the output process is then transferred to another location, to take advantage of "international differences in price of inputs, such as labour." Both forms of FDI engender economies-of-scale and a more efficient use of resources by the firm making FDI. FDI is often undertaken to overcome trade barriers, as some companies find it cost effective to invest in a production facility in a foreign country rather than have to pay import tariffs (2-6). The Nissan and Toyota plants both fall into the category of Horizontal FDI because they overcome trade barriers of imposed quotas to produce for American consumers.

In his review, Margeirsson finds that FDI has a positive effect on economic growth, but this support is weak because many studies produced mixed findings. Macroeconomic studies are more favorable towards FDI and its effect on economic growth than their microeconomic counterparts, and it has been found that economies with more developed financial systems benefit more from FDI than less developed economies. Because the United States has one of the most developed financial systems in the world, this is generally a relevant finding for Mississippi considering the importance it has placed on attracting FDI. Margeirsson's review also found that FDI leads to positive technological spillovers, as multinational companies bring knowledge and technology to their host countries. Specifically, FDI increases local competition with the introduction of advanced products that contribute to innovation and an "improved allocation of resources" (7-9). In terms of job creation, "FDI is found to have a positive impact on employment levels," and "wages in foreign-owned companies have been found to be higher than in domestic firms" (10). These factors all indicate that FDI contributes to

economic growth, particularly in the long term, thus indicating why the state of Mississippi would be willing to finance these projects.

Some consequences of FDI, however, are not found as positive. One of the most common objections to FDI is centered on the topic of sovereignty. Foreign firms making FDI might aim to influence regulations and policies in their host countries, as they contribute locally to a large number of jobs. Therefore, local economies can become dependent on multinational companies making FDI, which leads to a loss of political sovereignty (11). An example of this dependence is the Nissan case where French députés are seeking to influence labor practices in Mississippi at the Nissan plant in Canton based on the French government's ownership in Renault's alliance with Nissan.

Incentives and tax concessions are also considered a cost of FDI. In order to secure an FDI project, local governments must offer the foreign company incentives to make their location competitive and favorable. Margeirsson posits that "lower taxes seem to attract FDI… But the costs are high enough to make it questionable whether this strategy should be adopted." He argues that it is better to improve systems that will benefit all industries, like infrastructure and education, than to spend a significant amount of money attracting one specific investment. He goes as far as to claim that incentives and concessions "can be fruitless or suboptimal" (12). For example, Mississippi spent hundreds of millions of dollars to bring Nissan and Toyota's plants to the state in the form of incentives, but it is questionable whether or not the increase in income tax revenue resulting from an increase in employment created by the construction and production of these plants equals or exceeds the incentives paid to these two firms,

especially if the plants do not remain in Mississippi long term once their tax concessions expire.

In Lucyna G. Kornecki's article, "Inward FDI in the United States and Its Policy Context," she provides a more nuanced look at FDI within just the United States, particularly in terms of the impact of the recent financial crisis. Although new FDI projects decreased by 50 percent from 2008 to 2009, the manufacturing industry was less affected, with FDI inflows only declining by 31 percent (5-6). This is relevant for the Toyota plant in Blue Springs that was commissioned in 2007, but was delayed due to the financial crisis, and did not become operational until 2011.

Kornecki focuses on the scale of impact of FDI in the United States, especially in terms of the manufacturing industry. She found that over the last ten years FDI has led to the employment of 5-6 million workers, 2 million of those being manufacturing workers. In addition, "FDI-supported manufacturing jobs tend to be more stable during economic recessions than domestic manufacturing jobs," and "workers at majority-owned U.S. affiliates of foreign companies receive 30 percent higher pay than those in non-FDI supported jobs" (7). Her findings are overwhelmingly positive regarding the impact of FDI on the economy and job creation, particularly for the manufacturing industry.

Kornecki also discusses policy measures the United States government has undertaken to increase FDI. Specific policy actions have included entering into various investment agreements, like bilateral investment treaties (BITs) and double taxation treaties (DTTs). She refers to SelectUSA and the important initiatives of state and local governments and development agencies undertaken to facilitate investment in their region in conjunction with the Committee on Foreign Investment and the role it plays in

monitoring mergers and acquisitions "for any national security concerns." This committee contributed to increasing investment by "reducing protectionist pressure that security concerns might otherwise generate," and Kornecki believes the government should maintain the United States' "open policy" toward FDI to take advantage of its benefits (8-9). In this regard, the state of Mississippi has cultivated relationships with Japanese organizations to foster new FDI projects, following the initiatives of SelectUSA.

FDI and Job Creation

As the research focus of this thesis is to assess the effects of FDI in Mississippi on job creation, I focus my further literature review on studies related to job creation from FDI in the United States. Julian Richards and Elizabeth Schaefer of the Office of Trade and Economic Analysis at the Department of Commerce co-authored a report titled "Jobs Attributable to Foreign Direct Investment in the United States" in February of 2016. This report outlines the estimated total direct and indirect jobs in the United States resulting from FDI, including those spurred by productivity growth from technology spillovers. To generate their estimations, the authors used the United States Applied General Equilibrium (USAGE) model in which they removed all of the FDI from the U.S. economy and observed changes in employment levels. Their model incorporated "supply side constraints using price mechanisms and market clearing assumptions," in addition to "interrelated changes in labor demand and supply, wages, capital investment, public expenditures and revenues, and exchange rates and change" (2-3).

Richards and Schaefer found that FDI provides 6.1 million direct jobs and 2.4 million indirect jobs, totaling 8.5 million jobs (Executive Summary), which equals six percent of total employment and 5.7 percent of GDP in the United States (7). They also applied their model to specific manufacturing sectors. Within the motor vehicles, bodies and trailers, and parts sector, they found that FDI accounts for 369,000 jobs, or 44.6 percent of total jobs in the sector. As this percentage is the largest among all manufacturing sectors (5), it means that the motor vehicles manufacturing sector relies heavily on FDI for employment.

Richards and Schaefer next applied their model to estimate the number of jobs attributable to an increase in production related to technology spillovers from FDI. They found that in the manufacturing sector alone, over the last 26 years, another 3.5 million jobs can be attributed to FDI when technology spillovers are included, or 2.5 percent of employment and 2.9 percent of GDP. Therefore, Richards and Schaefer inferred that "12 million people have jobs in the U.S. due to either direct employment at foreign firms, indirect and induced employment, or productivity spillovers" (13).

In 2012, Beata S. Javorcik produced a report for the World Bank titled "Does FDI Bring Good Jobs to Host Countries?" in which she emphasized that "jobs created by FDI are good jobs, both from the worker's and the country's perspective." She asserts that jobs at foreign firms are likely to pay higher than jobs at their domestic counterparts, in part because they are more willing to offer training to their workers. This is important from the government's perspective because it implies that FDI is associated with increased productivity related to better competition and knowledge spillovers (25-26).

Javorcik states that because of the "positive externalities associated with FDI … a government intervention aimed at increasing FDI inflows may be warranted." However, like Margeirsson, she also cautions governments to provide incentives and concessions, because "it is difficult to ensure that a foreign affiliate that is awarded FDI incentives will remain in operation for a sufficient number of years to warrant the subsidy" (26). She instead encourages governments to spend more money promoting their locations to attract investments. Overall, she is positive about the potential for the job creation and economic growth prompted by FDI, which is supportive for Mississippi's efforts to attract FDI to primarily create jobs.

Japanese FDI in the United States

Japanese outward foreign direct investment was spurred in the late 1980s by an appreciation of the yen, with the United States as its primary destination. Japanese FDI was "concentrated in the automobile, steel, and electronics industries," as it "was motivated largely by a desire to maintain access to the U.S. market in the face of actual or prospective trade restrictions." Over time, Japan has transferred a significant amount of technology to the United States, particularly in the manufacturing industry. "The technology transferred has mainly taken the form of superior methods of managing manufacturing and other process technologies … In the automobile industry, which has been the most extensively studied, U.S. manufacturing has benefitted from the implementation of manufacturing process management techniques developed in Japan" (Chapter 13). Specifically, the imitation of processes by domestic firms contributed to an increase in competition which spurred innovation in the United States.

Japanese investment continues to benefit the United States economy in several ways. In 2012, Japanese-owned firms "contributed $93 billion in value added to the U.S. economy." A large share of Japanese companies' contributions took the forms of paid wages and stimulated research and development (R&D) activity. In 2012, American workers at Japanese firms made on average $80,000 a year in terms of wages and benefits, which is significantly above the U.S. average. As wages at Japanese firms are also higher on average than at FDIs from other foreign countries, Japanese companies are viewed as "exceptional contributors to creating highly paying jobs in the U.S. economy." In addition, Japanese firms in the United States spent $10,260 per worker on R&D, roughly $2,000 more than the average for other foreign firms (Oldenski 2). In other words, Japanese firms have demonstrated a commitment to their American employees by paying them high wages and allocating a significant amount of resources to R&D.

Japanese automobile manufacturing is a prominent category within Japanese FDI in the United States. Japanese auto companies invested $35 billion in 2012 and $41 billion in 2013 to produce 3.2 million and 3.6 million cars and trucks, respectively, while they bought $51 billion in 2012 and $57 billion in 2013 worth of U.S. auto parts (8). In 2017, employment of Japanese auto companies exceeds 80,000 workers, which includes 60,000 manufacturing workers and 4,000 research engineers and scientists at 26 manufacturing plants and 36 research facilities (8), and accounts for a large number of high paying jobs for American workers. These numbers do not include employment in the dealer network of Japanese automobile companies, that employs more than 375,000 workers. In 2015, "more than 1.5 million U.S. jobs [were] supported by the Japanese-brand automobile companies … [generating] over $106 billion in worker compensation,

which in turn results in more than $16 billion in personal income taxes to the federal government." In addition, the Japanese automobile industry in the United States has continued to grow, with direct employment increasing by 20.8 percent since 2011 (Prusa, Executive Summary). This growth has exhibited an unprecedented rate because total employment by Japanese firms, including indirect jobs generated by these companies, has increased 17 percent since 2011, while overall employment in the U.S. economy has only grown 7 percent (12). Moreover, total compensation paid by Japanese firms has increased 33.9 percent since 2011, which is "more than twice the growth in compensation for all U.S. workers" (13). As the manufacturing industry, including automobile manufacturing, is an important gauge of the U.S. economy as a whole, "the performance and growth [of the Japanese-brand automobile producers] are important indicators for the overall U.S. economy" (3).

The above data provide evidence that Japanese firms are high paying employers of thousands of American workers, contributing significantly to the overall U.S. economy. This indicates that Mississippi's partnership with Japan is a strength of Mississippi's economy, and the fact that Mississippi is the home of two major Japanese auto-manufacturing plants signals the existence of high paying and stable manufacturing jobs in the state.

Employment Impact of Motor Vehicle Plants

Beyond having direct employment impact, the FDI projects of auto manufacturing plants, such as the Nissan and Toyota plants, are believed to have the potential to contribute to a large increase in indirect employment. Brian Adams from California State

University, East Bay authored a study in October of 2015 that examines the indirect jobs created by motor vehicle assembly plants. He states that policymakers commonly justify the large amount of concessions they pay to auto manufacturers with the belief that many indirect jobs will be created through the construction of these plants. His study, like mine, aims to examine if the estimations of the indirect employment from plant openings by local governments are correct. For this examination, he "compares the employment gains in regions that landed assembly plants with those in comparable regions that did not" (3). I attempt to perform the same examination in my study by including an assessment of employment levels in counties surrounding the counties where the Nissan and Toyota plants are located. My goal is to evaluate if the counties' investments paid off in comparison to neighboring counties that may benefit from the plant but did not necessarily have to pay for it. In contrast, Adams selected counties that were named by auto manufacturing companies as finalists for manufacturing plants but did not end up receiving one for his control group.

Adams finds that indirect jobs from parts suppliers do increase with the construction of an assembly plant, but not on a significant scale. Five years after a plant opened, only 500 parts supplier jobs have been created on average, while direct employment from the plant outnumbers indirect employment by a significant amount. He claims that indirect employment may continue to grow long term, but it is not guaranteed that plants will remain in one location for a long time. Therefore, so policymakers should pause before "dispersing hundreds of millions of dollars in subsidies" (30). In line with the other studies reviewed in this thesis, Adams cautions governments to be more conservative when providing incentives and concessions, because estimations of indirect

employment stemming from the plants are overly high and optimistic. As a result, governments will not receive the return on investment that they predicted. In my study, I assess whether or not the government of Mississippi's indirect job projections were too high, as indicated in Adams' study.

Existing Studies on Nissan and Toyota in Mississippi

To my best knowledge, only two past studies examined the economic impact of the Nissan plant in Canton or the Toyota plant in Blue Springs, and both of those studies examined only the Nissan plant in Canton. The first study was developed by Mississippi State University and the National Strategic Planning and Analysis Research Center in collaboration with Nissan. The study is publically available as it is displayed on Nissan's website. Using Regional Economic Models Inc. (REMI), the authors of the study find that Nissan has created 25,000 jobs in Mississippi contributing 2.9 billion to state GDP each year. The researchers also compare median family income, poverty rate, and unemployment rate, in addition to a few other measures, in Madison County with neighboring counties, but they do not show how these figures changed over time taking into account the time period before the plant opened (Nissan Canton). As Brian Adams claims that these models generally over-estimate the indirect employment resulting from motor vehicle assembly plants, and, as the study was funded by Nissan, it is possible that the figure of 25,000 created jobs is inflated. This study does not mention the incentives provided to Nissan for choosing its location in Madison County.

The second study is reported in the doctoral dissertation deposited at the University of Mississippi by John Patrick Peavy in 2007. This researcher uses the Nissan

plant in Canton to compare two economic impact models. He uses an input-output analysis model and a relative employment density model to estimate the employment impact of the Nissan plant, with the relative employment density model taking into account job displacement to estimate a net employment effect (Peavy, 1). The REMI model used in the study cited previously is an example of an input-output analysis model.

The input-output analysis model Peavy discusses in his dissertation produces a number, referred to as a multiplier, that is multiplied by the number of direct jobs to estimate the number of total jobs produced by the plant. The input-output analysis model Peavy found most credible produced a 4.0 multiplier, suggesting that the total employment effect of the Nissan plant in Canton is 17,108 jobs from 4,277 direct jobs created by the plant in 2004 (29).

Peavy also used a relative employment density model to estimate the employment effect of the Nissan plant, taking into consideration job displacement, or the number of jobs vacated by employees that took a job created by the new plant that were not refilled. Net employment is important because governments' tax revenues are not affected by total employment gains but net employment gains (33). Peavy used employment density, or county employment divided by county square miles, as his dependent variable, to assess the employment effect of his several independent variables, including wages, infrastructure, and the Nissan plant. He applied a random effects econometric model and used a regression analysis to determine the effects of these variables on employment. Peavy found, using this model, that the net employment effect of the Nissan plant in 2004 was only 4,062 jobs in the nine counties surrounding the plant, implying that a significant amount of jobs were displaced by the plant in the region (73). This model also estimated

the effects of other variables on employment in the same nine counties, including wages, schools, roads, education, and race, among other factors. Peavy found that "a county that spends money on human and physical capital realizes a significant increase in county-level employment," whereas the employment effect of the Nissan plant was below previous estimates. Therefore, Peavy raises the question that employment may be higher in Mississippi if resources had instead been spent on investments in human and physical capital (84).

In summary, Peavy's finding that input-output analysis models overestimate the employment effect of the Nissan plant is in accordance with the findings of other studies cited in this literature review. When job displacement is taken into account through the relative employment density model, the net employment effect of the Nissan plant is significantly lower than the estimates used by the state of Mississippi when it was planning and bidding for the plant. Peavy questions the effectiveness of the investment made in this FDI project by using his model to show that investments in human and physical capital can have more effect on employment than auto manufacturing FDI, and I find his study to be effective and convincing.

My examination reported in this thesis is different from those reported in the above two studies as I examine how employment and wages in Madison County have changed since the Nissan plant opened in comparison to a neighboring county to assess the economic impact of the plant relative to Nissan's expectations. I make the same examination of the Toyota plant in Union County to assess the effect of these Japanese auto manufacturing FDI projects in Mississippi on a state-wide level.

Summary of Literature Review

In summary, FDI produces millions of quality jobs for Americans. In addition, technology spillovers from foreign firms lead to more jobs and increased productivity in the United States economy. Japan is a prominent source of FDI in the United States as Japanese firms are high paying employers that invest heavily in research and development. However, the findings of past studies indicate that governments should be cautious when providing incentives and concessions to foreign firms because it is not clear whether or not they pay off, especially in light of the fact that estimations of indirect jobs resulting from the construction and operation of motor vehicle are often unrealistically high. For example, one independent study evaluating the economic impact of the Nissan plant found that the net employment impact of the Nissan plant did not meet expectations. Therefore, this study and other studies referenced in my literature review suggest that governments should consider investing in education and infrastructure instead of manufacturing FDI, because the payoffs are easier to discern and attract many industries instead of only one firm.

CHAPTER 3: RESEARCH ANALYSIS AND FINDINGS

Employment

Nissan

In 2002, Nissan promised to create 5,300 new jobs with their Mississippi plant opening in 2003. State officials estimated Nissan would bring 16,212 direct and indirect jobs to Mississippi by 2005. Table 1 [See Appendix] shows the change in employment in Madison County from 2001 to 2015 for all industries in Panel A, and separately for the manufacturing industry in Panel B. Change in employment for Rankin County, a county neighboring Madison County, is also shown. I used Rankin County as a control group because it did not receive the Nissan plant, which I am considering the treatment, and it therefore can be instrumental to better assess the impact of the Nissan plant in Madison County. Between 2001 and 2002, before the Nissan plant opened, employment in Madison County only grew by 4.95 percent, while employment in Rankin County grew by 2.32 percent. These numbers show that before the Nissan plant opened, these two neighboring counties experienced similar employment growth with Madison County outperforming Rankin County by only 2.72 percentage points.

This changed after the Nissan plant opened in 2003. While the growth of employment in Rankin County remained relatively stable with an increase in employment by 2.86 percent between 2002 and 2003, Madison County experienced a 21.11 percent increase in employment from 2002 to 2003. As a result, Madison County's employment growth between 2002 and 2003 was 18.25 percentage points higher than employment growth in Rankin County over the same period.

Employment in Madison County continued to grow after 2003, and by 2015 there were 52,401 employees in Madison County, a 48.5 percent increase. During the same time period, employment in Rankin County grew 27.46 percent, which is 21.04 percentage points below employment growth in Madison County.

Between 2002 and 2005, there was an increase in employment in Madison County of 12,432 jobs, though this net increase does not reach the estimate that the plant would create 16,212 total jobs by 2005. This discrepancy could be accounted for by other companies leaving the county or downsizing during that time frame, which reflects a job displacement.

A sustained growth in employment with the introduction of the Nissan plant in Canton is also shown within the manufacturing industry. As reported in Panel B of Table 1, Manufacturing employment in Madison County nearly doubled from 2002 to 2003 to 6,129 workers, or an 82.96 percent increase. Manufacturing employment in Madison County peaked in 2005 with 9,054 employees, but has remained much higher than pre-plant levels at 8,627 in 2015.

In comparison, manufacturing employment in Rankin County had been decreasing before 2003 and continued to decrease after 2003. As a result, manufacturing employment growth in Madison County was 25.87 percentage points higher between 2001 and 2002, and the gap increased substantially to 96.67 percentage points between 2002 and 2003. Manufacturing employment in Rankin County decreased from 5,055 to 4,515 from 2002 to 2003, and this figure has remained thereafter below 5,000. While manufacturing employment in Madison County has remained much higher relative to pre-2003 levels since the plant opened, manufacturing employment in Rankin County has

steadily declined. This difference shows the Nissan plant has had a greatly positive effect on employment in Madison County because the employment trend in Madison County would have likely followed that of Rankin County if the plant had not been constructed.

Overall, the employment projections of the Nissan plant have largely been met, as evidenced by an increase in employment in Madison County from 29,136 in 2002 to 52,401 in 2015. However, it is not possible to determine the exact number of those new jobs that are indirectly related to the operation of the Nissan plant. From 2003, or after the plant opened, to 2015, employment increased 48.5 percent, indicating the creation of jobs in Madison County indirectly related to the Nissan plant. Employment within the manufacturing industry in Madison County increased by 5,277 from 2002 to 2015, and this increase can be explained by the current number of employees at the Nissan plant, 6,400, but does not reflect any indirect growth (Nissan). However, other manufacturing jobs have left the county during this period, as there is a gap.

Table 1 also allows for comparison between employment growth in Madison County and the state of Mississippi overall. While overall employment and employment in manufacturing was growing rapidly in Madison County, the situation was quite different in the rest of the state. Overall employment in Mississippi increased by only 1.6 percent between 2003, when the Nissan plant opened, and 2015. This increase was 46.9 percentage points lower than the increase in employment in Madison County during that period. In addition, between 2003 and 2015, Mississippi lost almost 20 percent of its manufacturing jobs, while Madison County gained over 40 percent of manufacturing jobs.

Toyota

Toyota promised to bring 2,000 direct jobs to the PUL region, which is composed of Pontotoc, Union, and Lee Counties, in addition to 4,900 supplier jobs and another 1,400 indirect jobs by 2013 with the construction of their plant in Blue Springs, Union County, Mississippi. Table 2 [See Appendix] shows employment figures for the PUL region from 2009 to 2015, with all industries shown in Panel A and only the manufacturing industry shown in Panel B. Union County is the treatment county and Pontotoc and Lee Counties are used as control counties. Before the plant opened, employment was decreasing in Union County, with a negative percent change of 5.7 percent from 2009 to 2010. Employment was increasing slightly in Pontotoc and Lee Counties, with growth of 4.24 percent and 1.67 percent respectively.

This employment pattern changed, however, when the plant opened in 2011 and Union County experienced a significant growth in employment at 12.66 percent between 2010 and 2011, while employment growth slowed in both Pontotoc and Lee Counties, at 1.43 percent and 1.2 percent respectively. Between 2011 and 2015, employment grew in Union County by 13.89 percent, whereas employment grew by 14.12 percent in Pontotoc County during the same period, showing that there was not a significant amount of indirect jobs created in Union County after the plant opened that can be attributed to it.

There was an increase in employment of 1,736 between 2010 and 2011 between the three counties, bringing the total employment in 2011 to 68,718. 1,000 of these 1,736 jobs were added in Union County, where Blue Springs and the Toyota plant are located. In 2013, the year in which estimations were supposed to be met, total employment from the three counties was 71,751, so employment increased by 4,769 from 2010 to 2013.

This number does not reach the estimate that 8,300 direct and indirect jobs would be created by the construction and opening of the plant, indicating that estimations were too high or there was significant job displacement.

Panel B shows growth in employment in the manufacturing industry in Union, Pontotoc, and Lee counties between 2009 and 2015. Before the plant opened, manufacturing employment in Union County had decreased by 13.02 percent from 2009 to 2010, and it grew 8.77 percent in Pontotoc County and 0.72 percent in Lee County. However, between 2010 and 2011, the year the plant opened, Union County's manufacturing employment grew 41.56 percent, Pontotoc County's grew 1.4 percent, while Lee County's manufacturing employment increased by only 0.3 percent. These numbers show that the plant had a significant impact on manufacturing employment in Union County.

Manufacturing employment continued to increase in Union County between 2011 and 2015, with growth of 23.55 percent. This growth is 10.92 percentage points higher than growth in Pontotoc County and 23.55 percentage points higher than growth in Lee County during this time. Lee County lost nine manufacturing jobs between 2011 and 2015.

Manufacturing employment increased by 1,982 over the three counties from 2010 to 2013. This increase corresponds to the projection that 2,000 direct jobs would be created by the plant by 2013. However, if the indirect job creation projection was correct, one would expect to see higher job creation overall. Again, it is likely other manufacturing jobs left the region during this time. Although the three counties shared the costs of the plant, Union County reaped the vast majority of the benefits because,

without the plant, Union County could have also seen its employment remain steady like Pontotoc and Lee Counties, instead of its significant growth. It is unlikely the indirect jobs, which the plant was expected to create, were realized, as net employment did not grow to a level that would signify a large increase in employment at the level that was projected by 2013, which is the year when estimates were expected to be met.

I would like to reiterate that the treatment county's employment grew significantly more than the state of Mississippi's. Across all industries and the manufacturing industry, employment growth in Union County has been much higher, with a difference of 40.67 percentage points within the manufacturing industry from 2010 to 2011. Manufacturing employment has fallen noticeably in Mississippi since the turn of the century, in contrast to the growth in Madison and Union counties. Manufacturing employment in Mississippi has decreased by 48,000 since 2001, falling from 191,600 in 2001 to 143,600 in 2016. The employment effects of the Nissan and Toyota plants have not been substantial statewide when compared to this large decline.

Wages

Nissan

Table 3 [See Appendix] shows changes in average annual pay for all industries; Panel A, and the manufacturing industry; Panel B, in Madison County and Rankin County from 2001 to 2015. Before the plant opened, average annual pay in Rankin County had been higher than pay in Madison County for all industries and the manufacturing industry. With the opening of the Nissan plant in 2003, average annual manufacturing pay in Madison County increased 17.08 percent, compared to an increase

of 6.14 percent in Rankin County; a difference of 10.94 percentage points. This difference grew to 24.92 percentage points within the manufacturing industry between 2003 and 2015. Although Rankin County's manufacturing professionals were averaging a higher pay than Madison County's in 2002, this gap was bridged and overcome the year the plant opened. The roughly $5,000 jump between 2002 and 2003 in average annual pay for manufacturing professionals in Madison County shows that the plant's new jobs were higher paying than those that already existed in both counties.

In 2015, the average annual manufacturing wage in Madison County amounted to $14,198 more than the all industry average, $8,702 more than the manufacturing average in Rankin County, and $10,275 more than the statewide manufacturing average. Therefore, the opening of the Nissan plant in Canton marked the beginning of a trend in which the wages of manufacturing professionals in Madison County increased at a rate faster than the wages of other professionals. This trend also indicates the creation of higher level manufacturing jobs stemming from the opening of the Nissan plant in comparison to manufacturing jobs that existed previously.

Toyota

Table 4 [See Appendix] shows changes in average annual pay across the PUL region between 2009 and 2010 for both all industries and the manufacturing industry. Before the plant opened, average annual pay in Union County had already been growing at a faster pace than in Pontotoc and Lee counties, at 2.7 percent for all industries and 7.52 percent within the manufacturing industry, but average annual pay in Union County was still below Lee County's and Mississippi's averages in 2009. Average annual pay for

all industries increased over $3,000 the year the plant opened in Union County, or 10.33 percent, and nearly $7,000 within the manufacturing industry, with 21.58 percent growth. This significant growth continued through 2015, and average annual pay in Union County for all industries and the manufacturing industry was the highest among the PUL region in 2015, in addition to being higher than statewide averages.

As most of the employment growth from the plant occurred in Union County, this county has recorded the largest increase in average annual pay as well. The significant increase in annual pay of manufacturing professionals in Union County since the year when the Toyota plant began operation shows that the plant brought an influx of quality, high paying jobs that have been filled mostly by Union County residents.

Nissan and Toyota Plant Performances

Press releases and the websites for each the Nissan and Toyota plants reflect a tone that is overwhelmingly positive. Each company's press releases include numerous stories of the plants giving back to their communities through special events or charitable donations. Although it is not clear from pubic information whether or not the plants have reached their productivity goals, neither plant has either downsized or increased employment, thus remaining at about 6,400 and 2,000 employees, respectively. Nissan did not lay off any of its workers during the years of the financial crisis. There have been no public statements made from Nissan or Toyota signaling intent to move or close the plants, which is a good sign of their successful performance and which is reassuring for the Mississippi government and economy, especially because Nissan's tax concessions are set to expire in 2018.

Related Government Revenue and Expenditure

In 2002, Mississippi's total revenue amounted to $11,052,453,000, or $3,853.71 per capita. However, total expenditure of $12,742,438,000 left the state with a $4,159,879,000 debt at the end of the fiscal year. Revenue and expenditure both increased in 2003, the year the Nissan plant opened, but revenue exceeded expenditure and Mississippi's debt was reduced to $4,166,614,000.

In 2010, Mississippi's total revenue was $20,978,857,000, which exceeded its total expenditure of $20,022,652,000. However, in 2010, debt at the end of the fiscal year reached $6,491,980,000. The majority of the increase in debt occurred during 2007 and 2008, at the time period of the financial crisis. In 2011, total revenue was $23,441,796,000 and expenditure equaled $20,157,417,000. The year the Toyota plant opened, Mississippi's revenue increased by roughly $2.5 billion, but expenditure increased by less than $150 million. Tax revenue increased, potentially to help pay off the debt that had been accrued during the financial crisis, but there was not a significant increase in expenditure. Therefore, it is difficult to assess a clear impact on Mississippi's balance sheet made by the openings of the Nissan and Toyota plants and subsequent incentives paid by Mississippi to these companies, in part because they are most likely spread out over a long stretch of time, and the large increase in expenditure during the financial crisis largely masks an increase that would be seen resulting from the incentives paid to either Nissan or Toyota.

CHAPTER 4: DISCUSSION

Summary of Findings and Implications

The findings of the studies covered in my literature review indicate that FDI is a source of millions of high paying and stable jobs in the United States, which are particularly salient within the manufacturing industry. Significant contributors of these FDI projects are Japanese firms, particularly Nissan and Toyota, which pay their employees high wages and invest in training, research, and development, while transferring their technological knowledge and manufacturing processes to their American subsidiaries. However, the reviewed studies have also found that the indirect employment estimations resulting from new automobile assembly plants are largely inflated, specifically, governments pay high incentives to these foreign firms to attract their investments without a clear sense of the benefits they could receive, especially because it is not known how long a plant will remain in its location, and what indirect employment growth will be because it can take several years to achieve. My analysis and the related findings reported in this thesis indicate that the Nissan and Toyota plants in Canton and Blue Springs respectively have had positive influence on employment and wages in the counties where they are located, but I found no indication that the indirect job creation stemming from the plants met expectations. Net employment within the manufacturing industry in Madison County increased by 5,277 from 2002 to 2015, and this figure increased 2,386 from 2010 to 2015 in the PUL region, showing a net increase close to the direct employment produced by the plants, but the absence of an increase that would be expected if there was a large growth in indirect employment from these plants, indicating job displacement. Average annual pay for manufacturing workers increased

roughly $5,000 the year the Nissan plant opened in Madison County and nearly $7,000 the year the Toyota plant opened in Union County, signaling the creation of high paying jobs. There has not been a noticeable increase in Mississippi's debt related to the concessions paid to these companies, though it may be masked by the debt accrued during the financial crisis, and current state debt would not be affected by tax concessions, because providing tax concessions only reduces potential future revenues.

Since 2001, manufacturing employment in Mississippi has decreased by 48,000 jobs. This decrease implies that the additions of the Nissan and Toyota plants have been unable to reverse the large-scale diminution of Mississippi's manufacturing industry, and that the creation of indirect jobs through these plants cannot be determined exactly because other manufacturing jobs are leaving the state or disappearing altogether. In addition, the extent of the incentives and concessions paid to Nissan and Toyota cannot be discerned clearly, as reports vary greatly, sometimes claiming Mississippi is paying more to these companies than advertised before the plants' construction. As Nissan and Toyota can decide to close the plants whenever they choose, the state of Mississippi must take into consideration the impact of negative international press relative to the Nissan plant and its non-unionization. The plant has also received a significant amount of attention nationally from protests led by high profile figures including Senator Bernie Sanders. This attention not only discourages other firms from investing in the state but also adds to the perception that Mississippi does not treat its workers fairly or perpetuates low manufacturing wages nationwide by spending millions of dollars attracting non-unionized manufacturing plants with its right to work laws. This attention makes it more

challenging to justify the hundreds of millions of dollars Mississippi spent to bring the plants here because the expected benefits have not been fully realized.

Conclusion

The Nissan plant in Canton and the Toyota plant in Blue Springs contribute to their communities through charitable donations and investments in education in addition to providing stable, relatively high wages to their numerous employees, but some observers claim there are alternative ways to attract FDI without paying high incentives. They argue that investments should be made in education and infrastructure statewide to increase the skills of Mississippi's workforce and improve its facilities, while money can then be spent networking with foreign firms to advertise Mississippi's superior services, rather than allocating millions of dollars to outbid another region for a plant that will only serve one community and can leave whenever its owner decides. The fact that the PUL region was outbid and still received the Toyota plant shows that incentives and concessions are not the most important factors to firms when deciding where to locate their FDI assembly plants.

Mississippi might consider attracting numerous industries other than manufacturing to the state, as the extreme decrease of employees in manufacturing sectors of Mississippi over the last 15 years has shown that the manufacturing industry does not have a promising future and that money spent to attract manufacturing jobs to Mississippi could be better spent on other, more promising industries. Overall, the Nissan plant in Canton and the Toyota plant in Blue Springs have had a positive impact on their local economies and have met expectations related to direct employment, but the same

does not apply to indirect employment related to these plants. Therefore, it is not clear whether the state of Mississippi has received the expected return on its investment in the form of an increase in revenue from income taxes to an extent that would cover the amount that has been paid in incentives and concessions. In the future, Mississippi might be better off investing in infrastructure, education, and advertising to attract FDI from knowledge-intensive industries rather than relying on bidding through the form of offering incentives and concessions to companies building manufacturing plants. Improvements in education and infrastructure could better serve the Mississippi community as a whole, and this should be taken into account when Mississippi is deciding next how to allocate its resources.

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APPENDIX

Table 1: Changes in Employment, Nissan

Panel A. All workers										
	Before plant opening				After plant opening					
	2001	2002	% Change 2001-2002	Difference in % Change	2003	% Change 2002-2003	Difference in % Change	2015	% Change 2003-2015	Difference in % Change
Madison County (Treatment)	27763	29136	4.95		35288	21.11		52401	48.5	
Rankin County (Control)	45709	46773	2.32	2.72	48112	2.86	18.25	61322	27.46	21.04
Mississippi	1111255	1104255	-0.63	5.58	1096802	-0.67	21.78	1114379	1.6	46.9
Panel B. Manufacturing workers										
	Before plant opening				After plant opening					
	2001	2002	% Change 2001-2002	Difference in % Change	2003	% Change 2002-2003	Difference in % Change	2015	% Change 2003-2015	Difference in % Change
Madison County (Treatment)	2852	3350	17.46		6129	82.96		8627	40.76	
Rankin County (Control)	5814	5325	-8.41	25.87	4648	-12.71	95.67	4019	-13.53	54.29
Mississippi	191600	182100	-4.96	22.42	179200	-1.59	84.55	143600	-19.87	60.63

Table 2: Changes in Employment, Toyota

Panel A. All workers										
	Before plant opening				After plant opening					
	2009	2010	% Change 2009-2010	Difference in % Change	2011	% Change 2010-2011	Difference in % Change	2015	% Change 2011-2015	Difference in % Change
Union County (Treatment)	8379	7901	-5.7		8901	12.66		10137	13.89	
Pontotoc County (Control)	10275	10711	4.24	-9.94	10865	1.43	11.23	12399	14.12	-0.23
Lee County (Control)	47575	48370	1.67	-7.37	48952	1.2	11.46	51702	5.61	8.28
Mississippi	1081138	1074617	-0.6	-5.1	1076488	0.17	12.49	1114379	3.52	10.37
Panel B. Manufacturing workers										
	Before plant opening				After plant opening					
	2009	2010	% Change 2009-2010	Difference in % Change	2011	% Change 2010-2011	Difference in % Change	2015	% Change 2011-2015	Difference in % Change
Union County (Treatment)	2335	2031	-13.02		2875	41.56		3552	23.55	
Pontotoc County (Control)	5461	5940	8.77	-21.79	6023	1.4	40.16	6784	12.63	10.92
Lee County (Control)	9899	9970	0.72	-13.74	10000	0.3	41.26	9991	0	23.55
Mississippi	137700	134600	-2.25	-10.77	135800	0.89	40.67	143600	5.74	17.81

Table 3: Changes in Average Annual Pay, Nissan

Panel A. All workers										
	Before plant opening				After plant opening					
	2001	2002	% Change 2001-2002	Difference in % Change	2003	% Change 2002-2003	Difference in % Change	2015	% Change 2003-2015	Difference in % Change
Madison County (Treatment)	26802	27648	3.16		29225	5.7		42398	45.07	
Rankin County (Control)	27748	28138	1.41	1.75	29226	3.87	1.83	38310	31.08	13.99
Mississippi	25923	26665	2.86	0.3	27591	3.47	2.23	37642	36.43	8.64
Panel B. Manufacturing workers										
	Before plant opening				After plant opening					
	2001	2002	% Change 2001-2002	Difference in % Change	2003	% Change 2002-2003	Difference in % Change	2015	% Change 2003-2015	Difference in % Change
Madison County (Treatment)	26188	29487	12.6		34522	17.08		56587	63.92	
Rankin County (Control)	31425	32460	3.3	9.3	34452	6.14	10.94	47885	39	24.92
Mississippi	29419	30384	3.28	9.32	31988	5.29	11.79	46312	44.78	19.14

Table 4: Changes in Average Annual Pay, Toyota

Panel A. All workers										
	Before plant opening				After plant opening					
	2009	2010	% Change 2009-2010	Difference in % Change	2011	% Change 2010-2011	Difference in % Change	2015	% Change 2011-2015	Difference in % Change
Union County (Treatment)	28912	29692	2.7		32760	10.33		38737	18.24	
Pontotoc County (Control)	28380	28673	1.03	1.67	29343	2.34	7.99	31859	8.57	9.67
Lee County (Control)	34199	34414	0.63	2.07	34988	1.67	8.66	37182	6.27	11.97
Mississippi	33847	34343	1.47	1.23	34976	1.84	8.49	37642	7.62	10.62
Panel B. Manufacturing workers										
	Before plant opening				After plant opening					
	2009	2010	% Change 2009-2010	Difference in % Change	2011	% Change 2010-2011	Difference in % Change	2015	% Change 2011-2015	Difference in % Change
Union County (Treatment)	29313	31517	7.52		38319	21.58		49890	30.2	
Pontotoc County (Control)	28936	28986	0.17	7.35	30271	4.43	15.15	33478	10.59	19.61
Lee County (Control)	37957	38105	0.39	7.13	38191	0.23	21.35	43506	13.92	16.28
Mississippi	39568	40476	2.29	5.23	41816	3.31	18.27	46312	10.75	19.45

Note: Source of data for all tables is the Bureau of Labor Statistics' Quarterly Census of Employment and Wages.