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**I, Per Jansen B.A., hereby submit this original work as part of the requirements for the degree of Master of Community Planning in Community Planning.**

It is entitled:

**A statistical and geographic analysis of wage theft in Hamilton County, Ohio**

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# A statistical and geographic analysis of wage theft in Hamilton County, Ohio

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## **Abstract**

This thesis analyzes wage theft in Hamilton County, Ohio, through formal complaints to government agencies dedicated to enforcing labor law, including the US Department of Labor and the Ohio Department of Labor Compliance. Wage theft is the violation of labor laws, on the federal, state or local level, designed to protect the wages and earnings of workers. These laws can include minimum wage, overtime, unpaid wage and workers' compensation laws. The data set that forms the core of the analysis is formed by every state and federal wage complaint, including minimum wage, unpaid wages and overtime, in Hamilton County from 2000-2010. This work is the first large-scale and thorough analysis of wage theft in Hamilton County. The paper examines the distribution of violating firms and workers who have suffered from wage theft. It also develops a novel methodology for aggregating, comparing and analyzing wage theft data at the local/county scale. It analyzes variables that correlate with wage theft on the jurisdictional level throughout the county through regression analysis and identifies hotspots of wage theft through geospatial statistics, including the Gedis Ord statistic.

Findings feature large concentrations of wage theft and victims of wage theft in downtown Cincinnati and the large suburbs along I-75, including Blue Ash, Springdale and Springfield Township. The thesis concludes by making policy recommendations for individual municipalities suffering from wage theft as well as the county as a whole, including an increase in resources for enforcement agencies and a clearinghouse for information on firms that engage in wage theft. The work also provides a framework for municipalities, regional governments and civil groups to collect and analyze their own wage theft rates.

**Key Words:** Wage theft, Hamilton County, labor law compliance, minimum wage

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## **1. Introduction**

### *1.1 Background*

Around the nation, millions of workers suffer from violations of federal, state and local labor law (Bobo, 2009; Danziger, 2009; Government Accountability Office, 2009a). Whether employers violate minimum wage laws and/or overtime laws, refuse to pay workers the wages they have earned, or violate other regulations designed to protect workers, reported rates of noncompliance with labor law are on the rise in many industries around the United States. Hundreds of millions of dollars in wages are stolen from workers, but marginal populations, including women, blacks, immigrants and ex-felons suffer disproportionately (Government Accountability Office, 2009a; Pager, 2007). This phenomenon, addressed by a growing group of scholars and activists as wage theft, is quickly gaining a high profile among Americans as popular coverage in the news media increases. Indeed, it is rapidly becoming a serious problem in Hamilton County (Curnutte, 2010).

Wage theft has serious implications for many actors. Workers suffer when they do not receive the wages they have earned. This deprives them and their communities of purchasing power and economic parity, fostering further inequality in the working class neighborhoods that predominately suffer from wage theft (Milkman et al., 2010). Honest businesses are strained by the unfair competitive advantage that cheating firms gain when they pay below the minimum wage. And governments suffer not only from the increased strain placed on their departments tasked with enforcing labor law, but also from lost revenue when employers illegally avoid paying FICA contributions, unemployment insurance, and income tax.

The study of wage theft is still in its infancy. Scholars from social justice, community organizing and sociological perspectives have recently begun focusing research on the subject, while economists have studied the issue in a limited manner since the 1970s (focusing on minimum wage noncompliance (cf. Danziger, 2009; Sellekaerts et al., 1984; Yaniv, 1994, 2009)). But increased media attention, rising rates of wage theft, and the ravages of a prolonged economic recession have combined to increase public awareness of the phenomenon, and have inspired groups of activists around the country to campaign for wage theft laws on the local, state and federal level.

New research on the methods and scope of wage theft is changing the field, yet there is little integration between the sociological and economic aspects of the study. There is also little analysis on the effectiveness and scale of local, state and federal wage theft remediation options. Only activists have reviewed current state and local policies or campaigns to improve enforcement. This research attempts to fill in these research gaps through a thorough analysis of wage theft at multiple scales in Hamilton County, Ohio.

## *1.2 Problem Statement*

Wage theft is a serious problem in the United States, but there are few indicators of instances on any scale besides the national. National estimates vary widely depending on assumptions and methodology. Research has typically focused on major metropolitan areas, primarily New York, Chicago and Los Angeles. Thus, there is no estimation of the scope or the size of the problem in most localities across the United States, including Hamilton County. Public policymakers are unaware of both the large

sums of money workers are losing in their communities, and of the extent of corporate crime in their businesses. Techniques and tools for assessing these rates do not exist. As it stands, local governments are unable to tell if wage theft is a significant problem in their communities, or which industries and neighborhoods suffer the most.

An analysis of the scope, frequency, and geographic distribution and impact of wage theft is needed to determine if it is a serious problem. Additionally, so is a discussion of the cost, impact and appropriate scale of intervention. Finally, little review has been done on existing local responses to wage theft or how workers decide which option to use to try to win back wages. These too are significant gaps in the study of wage theft.

### *1.3 Research Questions*

This project will attempt to answer some of the above described problems in the study of wage theft with a focus on Hamilton County. This section of the project distills the above issues into specific research questions enhance our understanding of wage theft issues and to help forward the research agenda for wage theft.

#### *1.3.1. Is Wage Theft a Problem in Hamilton County?*

Before an adequate analysis can be made of practical solutions to wage theft in Hamilton County, the scope of the problem must be identified. How can local governments in Ohio collect appropriate data, measure instances of wage theft, and compare them to a baseline? A comprehensive survey of proven instances of wage theft will allow for the exploration of further questions involving wage theft in the county

if the problem is significant. Comparisons with other studies of metropolitan areas and national rates of wage violation will allow for the identification of the seriousness of the problem and give an idea of the need for policy to address the issue.

To answer this question, data have been collected from the primary sources of reported cases of wage theft. Cases from the U.S. Department of Labor (DOL) and the Ohio Department of Industrial Compliance (ODIC) provide the primary data of wage theft violations (including minimum wage, over time and back wages) from 2000 to 2010 in Hamilton County. These data will include the type of violation, the cash amount in question, the place of business and its address along with other categories.

Unfortunately, the data will not reveal all of the instances of wage theft in the county. Wage theft often goes unreported. Survey methodologies of low-income workers suggest that rates of wage theft are higher than reported instances. Though techniques exist to estimate this difference, they are considered for the purpose of establishing a baseline for comparison to reported instances, but are qualified. Regardless, important information can be gleaned from an analysis of reported instances of wage theft. These data allow for a clearer picture of the scale of wage theft than Hamilton County currently has, and provides a glimpse into the capacity of the organizations handling wage theft. The research will also allow for the analysis of industries committing wage theft across the county, and prepare the study for the analysis of subsequent research questions.

### *1.3.2 How is Wage Theft Handled in Hamilton County?*

The study discusses how workers come to choose an option for remediation. Because of the data attached to each case (place employment, industry, wage), the research can analyze which categories of workers use which means of addressing wage theft. The project also analyzes which method is most successful in returning back wages, including the overall likelihood of having wages returned and the normalized amount (from 0 percent of the owed wages to all of the owed wages, or over in cases of damages).

### *1.3.3 What Variables are related to Wage Theft in Hamilton County?*

An analysis of wage theft instances in Hamilton County will connect wage theft to specific geographic areas, including political jurisdictions. This is a special advantage that this methodology holds over survey methodologies, because the latter cannot always relate instances of wage theft to specific employers or geographical areas. By analyzing correlations with social variables available from the United States Census Bureau, the research project attempts to discover connections between the socioeconomic characteristics of a political jurisdiction and instances of wage theft.

Additionally, data provided by the State of Ohio contain geographical information on the workers reporting wage theft (the US data do not). Thus, in a separate analysis, the project first examines the distribution of workers who suffered from wage theft and consequently launched complaints to the state regulatory department, and then analyzes the socioeconomic characteristics of their neighborhoods in order to determine which areas are more likely to experience continued instances of wage theft.

#### *1.3.4 What Policies are Effective in Curbing Wage Theft?*

As the study demonstrates wage theft to be a serious problem in many areas of Hamilton County, some policy prescription may be needed to alleviate the situation. By studying wage theft laws from around the United States and relative instances of wage theft in each municipality in Hamilton County, the project concludes by recommending policy to improve the conditions of workers throughout the county and state.

## **2. Literature Review**

### *2.1 Introduction*

Wage theft – when employers, through various methods, illegally keep wages and benefits legitimately earned by workers - is an enormous problem facing millions of low- and middle-income workers in the United States (Bobo, 2009; Government Accountability Office, 2009a). Society's most vulnerable, including blacks, immigrants, and the poor, are the most common victims of wage theft (Danziger, 2009). Yet the problem is not widely discussed or recognized outside of a limited circle of economists, activists and government officials, despite its important implications for poverty, equality, accountability and the rule of law. Recently, possibly due to the recession beginning in 2007, many news outlets and activists are bringing the issue to light for a wider audience (Bazar, 2009a, 2009b).

This literature review first discusses wage theft in general, defining the scope of the problem in terms of numbers of employees affected, a general estimate of the wages in dollars lost, and the industries that commit wage theft most frequently. It also discusses the socioeconomic characteristics of employees likely to suffer from wage theft. The review then elaborates on the various types of wage theft and discusses the more important categories, including misclassification, minimum wage violations and the discrimination faced by minorities and immigrants. It next discusses the economic view of wage theft from an employer's perspective, detailing why noncompliance with labor law is attractive. The review then examines the federal and Ohio state laws that govern wage theft and wages and reviews the status and role of the federal DOL in protecting workers from wage theft. It proceeds to discuss coverage of wage theft in the popular

media today, and concludes by discussing issues of marginality as they concern wage theft – the fact that many of the workers who suffer disproportionately from wage theft are women, felons, African Americans, and immigrants – though it must be noted that many victims are nonetheless white and middle-class.

The extent of wage theft in the United States is difficult to define fully for two important reasons. First, wage theft is in its infancy in terms of academic study: related literature is divided between legal studies or work by activists (Bobo, 2009; Lichtenstein, 2007). Much has been written on noncompliance with minimum wage laws from an economic perspective, and these studies are united by a common overarching methodology of economic analysis of Current Population Survey data (Borjas, 2009; Danziger, 2009; Fluckiger, 1990). These economic analyses do not focus on specific geographic areas, and the collection of state or federal complaint data is not part of their analyses. Thus, this project will fit into that literature to the extent that it attempts to build a model to estimate wage theft in Hamilton County.

The second barrier to accurate rates of wage theft is the marginal social status of many low-income workers and the consequences they endure in pursuit of wages legally owed to them. Workers are likely to be fired for reporting wage theft, making it a risky proposition (Bernhardt et al., 2009; Government Accountability Office, 2009; Yaniv, 2006). Employers frequently have little compunction over breaking non-retaliation laws in the cases of marginalized workers.

Despite these difficulties, some studies have attempted to discern levels of wage theft in specific metropolitan areas or industries (Milkman, Gonzalez and Narro, 2010; Weil and Pyles, unpublished). The results are dramatic in most cases. A

comprehensive survey of low-income workers in three major American metropolitan areas (New York, Los Angeles and Chicago) found that 26 percent of low-income workers were paid less than the legal minimum (Bernhardt et al., 2009). A study focusing on Los Angeles found that among a random sample of low-income workers, 30 percent experienced wage theft or other broken labor laws (Milkman, Gonzalez and Narro, 2010). Additionally, some US government studies have attempted to quantify and project rates through submission of complaints to the Department of Labor, but Department competence and policies may distort this number as well (Government Accountability Office, 2009a).

Works in economics have attempted to identify noncompliance rates in the aggregate across the United States (Danziger, 2009). In a seminal article that founded the economic study of minimum wage noncompliance, Ashenfelter and Smith (1979) estimated that during the 1970s only 60 percent of firms in the United States complied with the minimum wage law (Ashenfelter and Smith, 1979). For males aged seventeen to nineteen, the compliance rate fell to 35 percent. A second study, focusing on the garment industry in Los Angeles with 2000 census data, concluded that only 46% of employers complied with the minimum wage (Weil, 2005). Finally, a 2005 study, using data from 1997 and 1998, found that only 28 percent of native males who were supposed to receive a minimum wage actually did, and that of immigrant males supposedly earning a minimum wage, only 20 percent received it (Cortes, 2005). Though the time periods of these reports differ, they all point to low rates of compliance with minimum wage.

Rather than analyzing economic and Current Population Survey data, wage theft studies (as opposed to economic studies of noncompliance with minimum wages) attempt to analyze compliance rates across industries based on survey interviews and statistical samples. According to the US Department of Labor's Report on Initiatives (2001), in 2000 no US poultry processing facilities were fully compliant with federal labor law. In the same year, only 40% of US nursing homes were fully compliant with federal labor law. The garment industry in major US metropolitan areas did poorly. In 1999, only 35 percent of New York garment firms were fully compliant. Los Angeles fared worse: only 33 percent of the city's garment firms were compliant with federal labor law (US Department of Labor, 2001).

The Department of Labor's annual count of back wages recovered is an indicator of the scale of wage theft addressed by the federal government. In 2009, the department secured \$57.5 million from employers in back wages. In 2008, before the recession was fully under way, the Department secured \$52.7 million.

Most sources argue that globalized economic competition places increased pressure on employers in the United States, especially in industries where overseas labor is comparatively cheap (Bobo, 2009; Moreton, 2009). This places increased pressure on business to cut costs, and labor is easier to cut and cheaper than capital. Coupled with the marginal status of most workers in labor intensive industries, the incentives to steal wages are strong for offending industries (Becker, 2004). Economic restructuring and the weakening of traditional labor protections, chiefly unions and government inspectors, may contribute to growing rates of wage theft as well. The desperation of workers to hold onto any job in a recession also gives businesses even

more power and clout in labor negotiations, and enables a greater propensity for wage theft.

## *2.2 Types of Wage Theft*

Because so many different laws cover and address wage violations in the United States, wage theft exists in many different forms (Bernhardt et al., 2009). Wage violations can occur when minimum wages are not paid, when overtime hours are ignored, and when deductions bring pay beneath the minimum wage. This section of the literature review briefly introduces and discusses the four most common forms of wage theft in the United States: (1) worker misclassification; (2), minimum wage violations; (3), last pay check theft; and (4) worker's compensation theft.

### *2.2.1 Misclassification and Overtime*

Overtime wage laws in the United States are difficult to understand, due to loopholes and exemptions for many specific positions. Most low-income workers are eligible if they earn under a minimum threshold of \$23,660 per annum. Professionals, teachers, farm workers and other types of workers are exempt from overtime pay automatically as a result of industry lobbying (Bobo, 2009). Misclassification occurs when employers illegally tell workers they are exempt from overtime pay when they are not (Ruckelshaus, 2008). Confusion over applicable law means that overtime pay is one of the more frequently abused labor laws in the United States.

### *2.2.2 Minimum Wage Violation*

Minimum wage jobs are frequently worked by vulnerable members of the labor force (Bernhardt et al., 2009). Thus, employers have a relatively easy time appropriating wages and paying beneath the minimum wage. This can be accomplished in several ways: Some businesses just take the money and pay lower than federal and state wages, while others deduct items and costs from an employee's wages. This is legal in some cases, but such deductions are not legally allowed to bring a worker's hourly wages beneath the minimum wage. Employers sometimes make illegal deductions as well, including necessary safety gear or training, or housing for immigrant seasonal workers.

### *2.2.3 Last Pay Check*

When workers quit a job or are fired, they are entitled to the pay check for their last week of pay. However, employees frequently have their final pay checks stolen or cut as businesses attempt to take advantage of the acrimony over the final conditions of work. The Department of Labor handles thousands of final pay check requests every year (Bobo, 2009; Valenzuela et al., 2006).

### *2.2.4 Worker's Compensation*

Finally, most workers are entitled to worker's compensation, a form of insurance that pays wages if an employee becomes injured or ill due to workplace dangers. Many businesses ignore worker's compensation completely, neglect paying taxes to support it, encourage workers to pay their own medical expenses, or pay them small cash

settlements to bribe them into ignoring a worker's compensation claim. Finally, unscrupulous businesses merely fire injured workers and quickly replace them.

### *2.3 Economic Explanations of Wage Theft*

Other sections of the literature review discuss wage theft in a legal context, the popular views on the subject, and recent local, state and federal initiatives to combat wage theft. This section of the review uses contemporary economic theory to explain the occurrence of wage theft and elaborate on the reasoning of employers. It first describes the act of wage theft from an employer's view, with an emphasis on the costs and benefits of compliance, discusses the effects of compliance on employment, and examines common models of noncompliance.

When analyzing employers' noncompliance with minimum wage laws, economists view the situation through a lens of costs and benefits: the benefits a firm accrues by illegally paying its workers the market rate for labor under the minimum wage weighted against the possible costs of being caught by the DOL (Borjas, 2009). The DOL estimates that most cases of wage theft go unnoticed: thus, in these circumstances the employer keeps the difference between the minimum wage and the market wage. If caught, the most the DOL can win back for workers is the number of dollars originally owed. Thus, in a worst case scenario for the employer, noncompliance is treated as an interest-free loan equal to the sum of wages taken. With no punitive fines or punishments, the process encourages employers to pay beneath the minimum wage (Borjas, 2009).

Enforcement of minimum wage laws has other effects on employers, including effects on the number of employees hired. When hiring workers at the market rate (which is assumed to be beneath the minimum wage), the employer saves money and can afford to hire more workers (Yaniv, 1994). Thus, some economic models predict that when minimum wage enforcement mechanisms force employers to pay the minimum wage, the total number of employees will decrease until the firm's expenditure on wages is the same as before the minimum wage investigation. Many economists and policymakers argue then that minimum wages tend to decrease employment (Borjas, 2009), though that is not always the case (Fluckiger, 1990).

Some literature, however, argues that a minimum wage law will have no effect on employment if enforcement is weak. This is because noncompliance will lower the market rate of labor, to the point where employers will retain the same number of workers (Yaniv, 2006). This discrepancy has been explained in that minimum wages may reduce the number of workers, but the effects on the number of hours worked is less clear (Danziger, 2009). Also at issue is the effect of teenage minimum wage workers. When minimum wages increase, teenage workers are the ones more likely to be fired rather than adults who work minimum wage jobs (Yaniv, 1994). Thus, policymakers are sometimes willing to deal with the decrease in teenage employment (which is assumed to be temporary) to increase the welfare for adults working minimum wage jobs (the original purpose of the law).

Noncompliance impacts the effects of the minimum wage in other significant ways. Danziger (2009) argues that increasing enforcement against noncompliance or instituting punitive damages for wage theft can be just as effective at improving workers'

welfare as increasing the minimum wage. Ultimately, because enforcement and penalties can be increased administratively, they are far easier ways to increase the utility of a minimum wage than through the difficult legislative process of increasing the minimum wage.

The above literature mirrors other noncompliance and governmental studies in arguing that the current system of wage enforcement, with an employee-driven complaint system, is very ineffective. Economists determined in the mid-1980s that noncompliance with minimum wages disproportionately affected the weakest members of society. Blacks, women, low-wage workers, part-time workers and workers in the Southern United States are far more likely to suffer from noncompliance and wage theft (Sellekaerts and Welch, 1984). It minimizes the number of workers who actually complain about wage theft, especially in a period where the support of private sector unions in assisting wage claims is at its lowest (Borjas, 2009). It leads to increased risks for employees who do complain, increasing the likelihood of their firing (Yaniv, 1994). It has not led to overall lower rates of noncompliance; indeed, noncompliance rates are higher than ever (Government Accountability Office, 2009b; US Department of Labor, 2001). Review of the pertinent economic literature provides empirical evidence that wage theft is a major problem in the United States, but is less conclusive regarding normative policy involving the minimum wage. It lends credence to the idea presented elsewhere in this literature review that the current wage enforcement system is in serious need of overhaul. The next section of the review describes in greater detail the federal role in wage enforcement.

## *2.4 Federal Laws and the Department of Labor*

Discussions of enforcement and the efforts of federal, state and local governments make up a significant portion of the available literature on wage theft. Indeed, federal reports on wage theft are some of the only sources of actual empirical research on rates of wage theft around the nation (Government Accountability Office, 2009a; Government Accountability Office, 2009b; Government Accountability Office, 2009c; US Department of Labor, 2001). The federal Department of Labor is the agency charged with enforcing national labor law. This section of the literature review will briefly discuss federal and Ohio state labor laws, the practices of the Department of Labor and other federal organizations in reporting, punishing and studying wage theft.

### *2.4.1 Federal Labor Laws*

Since World War II, the federal government has been the prime creator of labor protection legislation in the United States. Though many states augment these laws, the federal laws are the most comprehensive and their universality means that finding assistance to secure back wages due under these laws is easier (Fine, 2006). Additionally, all of these laws are enforced by the Department of Labor's Wage and Hour Division, as described below. A brief discussion demonstrates the large array of laws the Division enforces and may explain some of the difficulty in enforcing the law (Government Accountability Office, 2009b).

The Fair Labor Standards Act of 1938 is the single most important set of labor laws in the United States (Bobo, 2009; Fine, 2006). The law applies to 130 million workers in the United States and created the principles of minimum wage, overtime, and

requires documentation of employee hours to prevent wage theft. These laws apply to illegal aliens, who make up a large number of low-wage workers in the United States. It also created the first strong child labor laws in the United States, though they have been updated since.

The Migrant and Seasonal Agricultural Worker Protection Act, passed in 1983, extended several labor rights to farm workers. Though minimum wage and child protection laws from the Fair Labor Standards Act apply to farm workers, several legal loopholes allowed farms to escape specific provisions (Bobo, 2009). The protections include federal and state guidelines for temporary housing, itemized deductions and pay stubs and the posting of worker protection laws in conspicuous areas. Additionally, the law clarifies certain kinds of safety equipment that employers must provide, and makes illegal charging or deducting for that equipment (Bobo, 2009).

The Family and Medical Leave Act is another relatively new law, passed in 1993. It provides unpaid leave to American workers for injuries, illness and pregnancy. Restrictions limit the law only to workplaces with fifty or more workers and only if the worker in question has been employed for one full year and has 1,250 hours of work logged.

The Davis Bacon and Related Acts apply to projects involving the expenditure of federal funds. In these cases, workers must be paid the 'prevailing wage', or the highest common wage rate in a region for similar work. These laws apply mainly to construction jobs and are intended to insure that federal funds create well-paid jobs, not exploitive ones (Bobo, 2009). Since union positions are typically the highest paid in a

region, their wages usually form the basis of most prevailing wage rates, as determined by the Secretary of Labor (Bobo, 2009).

Finally, the Occupational Safety and Health Act, passed in 1970, protects workers from workplace dangers including chemicals, noise, dangerous machinery and poor sanitary conditions (Bobo, 2009). The initial impetus for the law came from environmental activists, and labor unions seized the opportunity to incorporate protections from chemicals. The law also created the Occupational Safety and Health Agency within the Department of Labor, whose mission is to set and regulate workplace safety policy.

#### *2.4.2 The Department of Labor*

In the United States, and in several other countries around the world by permission, the federal Department of Labor is the prime investigator of compliance with the above-mentioned federal labor laws. The Wage and Hour Division is the branch of the department charged with carrying out investigations and monitoring compliance with those laws. The Department focuses on low-income workers, the sector of the labor force most vulnerable to wage theft (Bobo, 2009).

In investigating wage theft and related crimes, the Department of Labor targets certain industries that pay low-wage and hire marginalized and/or poor workers. These industries include restaurants, the garment industry and various agricultural positions, including vegetable picking and poultry processing (US Department of Labor, 2001). The Department has two main procedures for attempting to return back wages to workers. The first method, called conciliation, involves calling the offending employer,

informing the firm of the law it is breaking and asking for the wages to be returned. If conciliation fails, the Wage and Hour Division refers the case for litigation to either the Department of Labor's litigation department or the Treasury (Government Accountability Office, 2009a).

The effectiveness of the Department of Labor in processing claims and returning back wages to employees has changed over time. Budget cuts in the 1990s forced the Department of Labor, along with other federal agencies, to carry out an expanded mandate (in this case, the passage of the Family and Medical Leave Act) with less funding and fewer resources (US Department of Labor, 2001). The Department responded with a strategic method that aimed to reduce noncompliance with federal labor law through education campaigns and surveys of specific regions and industries to test the effectiveness of investigations and punishments (US Department of Labor, 2001). The Department of Labor selects industries to target through three main criteria: (1) Industries with high rates of violations in the past, correlated with data from other agencies including the Occupational Safety and Health Administration and the Immigration and Naturalization Service, are targeted specifically for future monitoring. (2) Analyses of workforce demographics which reveal large proportions of low-income or marginal workers receive special attention and focus. (3) Since studies reveal that significant growth or decline in industries lead to large changes in compliance rates, these industries become targets of the DOL for compliance monitoring as well (Becker, 2004; US Department of Labor, 2001).

A decentralized approach defines much of the recent efforts of the DOL. Regional and metropolitan branch offices of the Wage and Hour Division have authority

to target specific industries and conduct compliance surveys to discover the results of their work. These regional offices find distressingly low rates of compliance in every region of the United States.

Government reports demonstrate that the DOL systemically fails to protect potentially thousands of workers seeking unpaid wages. Over a period of several years, undercover investigations from the Government Accountability Office (GAO) revealed faulty investigative systems, poor performance by DOL staff, delays for investigation that frequently pushed complaints outside of the two year statute of limitations, efforts by Department of Labor staff to remove mishandled cases from the system, and failure to investigate claims of underage children working on dangerous machinery (Government Accountability Office, 2009b). The report also documented Department of Labor staff lying about the results of an investigation. The GAO argues that mishandling and incompetence in the Department of Labor has denied justice to potentially thousands of employees seeking their stolen wages.

The DOL and labor unions have historically been the prime vehicles for securing back wages to workers (Bobo, 2009), but increasing economic and political pressure has reduced the power of these institutions. New forms of worker's organizations for low-income workers have formed to fill these vacuums and workers' centers have become a major force among these new groups.<sup>1</sup> Many are community-based organizations where labor advocates, pro-bono professionals and non-profits work to represent poor workers and immigrants in labor issues (Fine, 2006). These centers have become important nodes in the Department of Labor's complaint reception

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<sup>1</sup> In Cincinnati, the Cincinnati Interfaith Workers Center (CIWC) fulfills this role; Fine (2009) provides a full list by state.

process: many workers are afraid to confront their employers directly for fear of illegal retaliation, but workers center staff can work for employees discreetly and contact the Department themselves. Workers' centers also allow employees to organize their complaints in larger groups; advocates report that large groups are more likely to secure their back wages than individuals, as evidence and claims mount and the problem of replacing so many employees grows (Bobo, 2009). Workers centers have less power than traditional labor unions, and they face difficulty organizing workers in marginal positions while high unemployment rates plague the nation. It is easy for businesses to fire bothersome employees and find new sources of labor when there is greater competition for each individual job (Fiscal Policy Institute, 2007).

Reform is an important theme for the Department of Labor. Firm-focused enforcement has not slowed rates of wage theft. After years of improving rates of wage law compliance during the 1990s, it must now recognize the setbacks of the 2000s when rates of wage theft skyrocketed, even before the recession, which has made matters worse.

Other recent federal efforts include the Theft Protection Act. In response to the poor performance of the DOL in enforcing labor laws, several members of Congress have proposed this new law which eliminates the statute of limitations on wage theft violations (Bazar, 2009b). Currently workers have two years to secure their back wages. If the investigation takes too long, the worker will receive no further support from the agency and he/she loses the opportunity to secure wages through private action.

## *2.5 Popular Coverage*

There has been a recent increase in interest in wage theft and labor law violations in the United States. Also, as the economy worsens, employees are more willing to complain about stolen wages when they count the most (Bazar, 2009a). Many articles describe individual acts of wage theft or court cases where employees win back wages through a ruling or settlement (Gorman, 2009). Sympathetic depictions of low-income workers seeking to gain illegally taken wages have been common in newspaper articles during the recession. However, like the academic study of wage theft, widespread reporting on stolen wages is a relatively recent phenomenon as individual cases of wage theft become better known.

The passage of wage theft laws in various states, cities and counties has had a significant effect on corporate law firms, which conduct a great deal of business with large employers. When Massachusetts passed its wage theft law in 2008, corporate law firms were quick to warn clients of the serious consequences of failing to pay close attention to their wage and benefit policies (Seyfarth and Shaw, 2008). Corporate trade groups have been quick to condemn these laws as onerous (Business and Law Resources.com, 2008) and to criticize governors and legislators for passing them.

None of the laws listed below actually made any new behavior illegal. All of the actions covered by these laws, including failure to pay minimum or back wages, failing to provide paid vacation, failing to pay necessary taxes, were already illegal. Firms and employers in compliance with labor laws have little reason to worry over wage theft laws. Indeed, most warnings from law firms to employers encourage them to “carefully

review your pay practices and be sure that your classification of workers meets current legal requirements” (Plowman 2010), i.e., to make sure they are following current law.

## *2.6 State and Local Efforts to Curb Wage Theft*

Given high rates of all types of wage theft and the limits of the federal government’s ability to enforce national labor laws, many states, municipalities and counties have begun creating their own mechanisms for enforcing state and local employment laws. Given the goal of this research project to catalogue wage theft policies and make recommendations for Hamilton County, it is key to review these state and local efforts at curbing wage theft. This section reviews laws passed or under consideration in states, municipalities and counties throughout the US and discusses common themes and issues that may be appropriate for any policy approach taken for greater Cincinnati and Hamilton County.

### *2.6.1 States*

State governments have been the most active in curbing wage theft. Usually through means of statutes amending labor codes or minimum wage laws, states have developed a number of techniques to discourage wage theft and encourage workers to report wage violations.

### *2.6.1.1 Massachusetts*

In 2008, Massachusetts passed the most progressive law in the country against wage theft (Creem, 2007). It enables workers to claim triple damages in addition to back wages when engaging in legal action with employers. Additionally, the law allows no excuse or good-faith argument on the part of employers. Even if a technical error or mistake caused the wage theft, the worker is entitled to triple damages. It is the most stringent punishment for wage theft in the United States.

Predictably, employers did not react positively to the law. Corporate law firms warned employers of the potential for costly law suits and the possibility that clients could “shop” for the best state laws against wage theft, which would naturally bring them to Massachusetts (Business and Law Resources.com, 2008; Seyfarth and Shaw, 2008). Besides the questions of jurisdiction this raises, the law could be evaluated as effective if the new consequences and costs of wage theft incentivize employers to pay the wages their employees earn.

### *2.6.1.2 Maryland*

Maryland is currently considering Senate Bill 694 (Lenett 2010). This would extend Maryland’s labor protection laws for minimum wage and other protections to overtime wages as well.

### *2.6.1.3 New Mexico*

The state of New Mexico passed a rather comprehensive wage theft law in 2009 that addressed many of the core issues facing wage theft enforcement (State of New

Mexico, 2009). It extends the statute of limitations for wage theft investigations to three years, and 'tolls' time spent investigating by public agencies (in other words, the statute of limitations does not continue to run out during public investigation, leaving the worker a private right to sue if the investigation fails). It mandates double damages in addition to back wages and allows for anyone related to the case to bring it to court to stay fears of retaliation (while also criminalizing retaliation).

Though not as aggressive as Massachusetts' law, New Mexico's wage theft law achieves several important goals in streamlining the complaint process, reducing the costs to workers to attempt to gain their wages back (by eliminating filing fees, helping workers retain their anonymity and mandating that the employer pay reasonable attorney's fees) and strongly discouraging further incidents of wage theft through mandating double damages.

#### *2.6.1.4 Washington*

The state of Washington also passed a comprehensive wage theft law in 2010, Senate Bill 6456 (Washington State Senate Labor, Commerce & Consumer Protection, 2010). It is not nearly as far-reaching as other state laws, however. It limits the statute of limitations to three years, and the most a worker can win back is the back wages plus interest equal to one percent per month, with the potential for a \$1,000 fine, or ten percent of the wages taken, for a willful violation. Unfortunately, this sum is limited to under \$20,000. The law provides other loopholes allowing employers to escape paying civil fines and fees.

The Washington State law does not address the incentives that make wage theft attractive. With a limited interest rate, stealing wages from workers could still be an affordable loan to a business because the interest rate does not float with the market rate. The lack of damages also fails to dissuade employers from stealing and fails to persuade workers to complain.

#### *2.6.1.5 Ohio*

Ohio's state senate considered a wage theft bill in the 2009-2010 session, SB 212. It has since been tabled. Lobbied by activist groups and labor lawyers around the state, this law had two major functions. First, it would have incorporated a thirty day limit for employers to pay their workers. If they pay their workers outside this window, legal redress would become available. In court, if wage theft is proved, workers can claim their back wages and can collect double damages. This would have been an enormous improvement over current Ohio law, which provides only for back wages and reasonable attorney's fees (Ohio Revised Code, 4111.10).

Second, the law would have given the director of the Ohio Department of Commerce much broader leverage to investigate wage claims. Currently, workers must write to the Department of Commerce, where the director may or may not take up the claim. The director may only engage in normal legal activities, or work out an arrangement with the employer. The new system would have allowed the director to independently investigate claims of wage theft for any of Ohio's labor laws at the behest of an employee or any other person interested in seeing the back wages paid. This would reduce the pressure on employees in fear of retaliation from the firm. Overall,

Ohio's proposed law would have been an excellent start for addressing wage theft in the state and encouraging employers to pay the original wage rate by making noncompliance more expensive for employers as well as easier and more profitable for the worker.

#### *2.6.1.6 New York*

New York's wage theft law, under consideration in the state senate, would achieve many of the common goals of wage laws (New York State Senate, 2010). Investigations into wage theft would be tolled, allowing claimants to pursue other actions if the investigation fails and provides double damages for previous violators.

#### *2.6.2 Cities and Counties*

Many cities, counties and metropolitan areas are home to campaigns working to pass wage theft legislation. Urban areas including Chicago, Los Angeles, Kalamazoo, New Orleans, Palm Beach, Carrboro (North Carolina) and San Francisco are home to coalitions of workers, immigrant's rights activists, union representatives and civil rights groups working to pass local wage theft legislation. Though these efforts are in their incipient stages, there have been a few successes.

##### *2.6.2.1 Miami-Dade County, Florida*

Counties and municipalities face legislative hurdles that differ from those faced by states. A state government can pass almost any reasonable law as long as it is constitutional, but a smaller jurisdiction usually can only pass laws with powers granted

to it by its state. However, if a law is claimed under the municipality's police power, (the state-granted ability to protect the health, morals and safety of a community), then it is usually within the authority of a municipality or county to pass it.

Miami-Dade County's wage theft law makes use of this police power to provide for the general welfare of workers who are the victims of crime and to improve the economic competitiveness of the county by punishing firms that undercut other firms by breaking the law, resulting in an unfair business advantage (Miami-Dade County, 2009). Miami-Dade's wage theft law provides for triple damages, much like the Massachusetts state law, and the ordinance also allows any court of competent jurisdiction or examiner appointed by the county to determine if wage theft has indeed occurred. However, to file a complaint with the county, the wage theft claim must be worth \$60 or more. The ordinance also outlines a detailed procedure for claiming and awarding the back wages.

#### *2.6.2.2 Fayetteville, Arkansas*

Labor and wage theft advocates are in the midst of a campaign to pressure city officials to amend several ordinances which would result in increased protection for workers from wage theft. The campaign originally presented a wholly original and new ordinance that sought to address wage theft comprehensively, but it was struck down by the city attorney (personal correspondence with Jose Luis Aguayo-Herrera, 2010).

#### *2.6.2.3 Kalamazoo, Michigan*

The city of Kalamazoo, Michigan, is host to a workers' alliance engaged in a campaign to enact a wage theft ordinance. The proposed Kalamazoo law forces

employers to pay back wages with a high interest rate and a large civil fine for repeat offenders (Musick, 2010).

### *2.6.3 State Misclassification Laws*

In addition to laws working against wage theft, many states are passing laws that seek to address the misclassification issue addressed above (when employers disguise who their workers actually work for in order to avoid paying wages, FICA contributions and other expenses). This thesis focuses on violations in minimum wage, back wage and overtime. However, misclassification is a growing problem facing state governments. This section will briefly discuss current efforts by state governments in combating misclassification losses. These laws in general provide for greater punishments for employers who willingly deprive the state of funds by misclassifying employees.

States seeking to pass these laws include Kansas, Minnesota, and Kentucky. States that have successfully passed misclassification laws include Washington, Utah, Colorado, Maryland, Delaware, Connecticut, and New York. This broad diversity of states includes both older, established labor markets including New York, Connecticut and Maryland, as well as Sunbelt, right-to-work states such as Utah and Colorado. A broad coalition of state governments from diverse economic and political contexts recognized the danger posed to both the state government's revenues and workers in passing misclassification laws.

The Ohio attorney general issued a report on the prevalence and severity of misclassification in the state (Ohio Attorney General, 2009). It uses several simple

methodologies devised by scholars to estimate the number of cases of misclassification in Ohio and the dollar amount that state and local governments are losing due to those cases. The Attorney General's office estimates that about 8.5% of Ohio workers are misclassified as independent contractors, depriving the state government of \$790 million and local governments of tens of millions of dollars. The state convened a panel to examine ways to combat worker misclassification.

### *2.7 Marginality*

Wage theft, and other labor law violations, disproportionately affects minorities and women (Bernhardt et al., 2009; Government Accountability Office, 2009c; Milkman, Gonzalez and Narro, 2010). Immigrants, felons, women and blacks are likely to lose more wages and suffer more labor law violations than white males (Cortes, 2005; Danziger, 2009). Additionally, many employers threaten complaining workers with firing or deportation if they are in the country illegally. Some businesses exploit racial tensions to pit groups of workers against each other to minimize the likelihood of unionization (Pager, 2007).

According to a comprehensive survey of low-wage workers suffering from wage theft, women were more likely to have wages stolen. Foreign-born workers were twice as likely as native born Americans to suffer from wage theft, and foreign women suffered the worst of all, as nearly half reported wage theft of some kind (Bernhardt et al., 2009).

Employers hold power against marginal workers, whether that power is legal, racial, social or political. Held hostage, these workers face severely limited autonomy in

their every day and workplace decisions (Wacquant, 2008). Despite the severity of the crimes committed against them by their employers, marginalized workers are thus more unlikely than other types of worker to report wage theft out of fear for potential retaliation. Economic analyses bear this theory out. In the United States, white males are the least likely demographic group to suffer from wage theft, while women, blacks and immigrants are the most likely (Yaniv, 1994). Any analysis of wage theft must take the coercive power employers have over employees into account, in addition to the traditional economic powers of employer vis-à-vis workers.

## *2.8 Conclusions*

This research project touches on several important bodies of literature. It meshes with academic and activist analysis of wage theft in the United States through its critical stance on wage theft and analysis of policies to ameliorate the problem. It engages the work of wage theft activists and public officials by reviewing wage theft policies and laws at the state and local level. It engages community and researcher activism on policy applications for wage theft. However, it differs in several aspects. Most studies of wage theft analyze either national or large scale first-tier metropolitan wage theft rates through survey methodologies. This study instead focuses on the smaller, local scale of a medium size metropolitan area, and uses complaint data from the federal and state governments as the basis of analysis. It advances the research agenda of the wage theft body through new methodologies and a novel analysis of specific geographies of wage thieves and analysis of wage theft industries.

The research project also uses information from the economic analysis of noncompliance with minimum wage laws. It uses this literature's analysis to formulate a theoretical understanding of wage theft as profitable for employers with little chance of getting caught and minor to no punishment besides paying the minimum wage when forced. The combination of incentives to steal wages, the low compliance rates across the nation and across industries, the power employers hold over workers and the worker-driven complaint system indicate that, in the United States, wage compliance is failing workers. New systems of compliance, reporting and enforcement are necessary to keep the wages of US workers in their own pockets, as well as new systems of analysis to provide data and information for new policies. By analyzing wage theft in a contiguous labor market and bringing novel data to light, this research project seeks to become part of the new wave of work to improve labor conditions in the United States.

### **3. Data Collection**

#### *3.1 Introduction*

The thesis intends to answer multiple research questions that address the core aspects of wage theft in Hamilton County: who commits wage theft; what information can be gleaned from a geographic review of wage thieves; how many cases of wage theft are reported to public authorities, how many cases do contemporary models suggest; and what could explain any discrepancy. Thus, it requires a diverse array of data sets from many different sources around Hamilton County, the state of Ohio and the federal government to ascertain reporting rates and information. This includes data from the US Census Bureau to construct a regression model for wage theft instances in Hamilton County. This section describes the data sources and methods used to collect information for the above questions, and then discuss the methods used to analyze that data.

#### *3.2 Sources of Data*

##### *3.2.1 Local Workers Centers and Nonprofits*

Qualitative interviews with a local workers center helped inform and plan much of this research, including the limits, scope and focus. No quantitative data on wage theft cases were collected from the workers center, because nearly all of their cases are remedied through private legal action or the use of the state or federal agencies already accounted for in the study. Including their cases would double count many instances and distort the results of the study.

### 3.2.2 *US Department of Labor*

The federal Department of Labor is where most minimum wage and overtime violations are reported. The complaints from these violations in Hamilton County were the largest and most significant source of data for the project. DOL data help answer many questions about wage theft in Hamilton County. The project examines how large a role the Department of Labor actually plays in correcting wage theft in the county, and if it has higher success rates than other options (state or local agencies, private attorneys) or if workers receive more money in Department of Labor claims than through other agencies. Because these reports contain the addresses of offending businesses, it also allows for the geographic analysis of firms whose employees use the Department of Labor to redress wage theft, and it enables the classification and analysis of industries whose employers access the DOL.

These data were requested by letter (dated September 25, 2010) to the Department of Labor's headquarters in Washington, D.C. A copy is found in Appendix A. This letter requested detailed information on every closed, minimum wage and overtime violation committed in Hamilton County reported to the Department of Labor, from 2000 to 2010. The following information was requested for each incident:

- Name of the violating business
- Industry of the violating business
- Street address of the violating business
- City of violating business
- ZIP code of violating business
- Current status
- Date complaint received
- Date complaint finished
- Whether the complaint was resolved (yes/no)
- Determination amount

- Whether amount was paid in full (yes/no)
- Reason for filing (unpaid wages, minimum wage violation, overtime violation)
- Hourly wage rate for complainant
- Whether complainant earns tips (yes/no)
- If the amount of the complaint was worth at least \$30 (yes/no)
- The dollar amount of wages claimed
- Whether deductions were withheld
- Approval area (accepted/unaccepted)

The federal government returned the requested data within weeks and with no fee assessed for collecting the data. The ease of requesting, processing and collecting this data, its low cost, and the simple format mean that jurisdictions of any size can rapidly access complete federal data and examine how serious wage theft is for their own areas. The thesis later describes the process for examining and analyzing this data to determine if jurisdictions have a serious problem with wage theft.

### *3.2.3 Ohio Department of Industrial Compliance*

The Ohio Division of Industrial Compliance (ODIC) is the state equivalent to the federal Department of Labor. It monitors employer compliance with state labor law (including state minimum wage and overtime laws) and investigates violations of state law. Its function and role are thus similar to the Department of Labor, on a smaller scale, concentrated within Ohio. Thus, many similar questions can be addressed: How many workers use ODIC instead of the DOL? Do they receive similar amounts of money in addressing claims? What geographical patterns lie behind firms whose employees go to ODIC instead of federal or local sources?

Data were collected from the ODIC in the same manner as above (and the letter is included in Appendix A). The same categories were requested, but due to differences in state and federal databases, some were not included. The data packet sent included both opened and closed cases. Because the overall number of cases was so small from ODIC compared to the DOL, and to maximize the diversity of the data, both opened and closed cases are used in the analysis (though only roughly 20 of the ODIC cases were still open, minimizing their impact).

#### *3.2.4 US Census Bureau, Current Population Survey*

To calculate the difference between reported rates of wage theft and estimated rates, the research project first needs to construct a model to calculate the estimated rate. According to previous research, a simple model can be built using the Current Population Survey and data from the US Census Bureau.

Census data on demographic and population variables were also collected for each jurisdiction in Hamilton County with cases of wage theft. This allows the use of regression analysis to calculate connections between certain predicted conditions (such as percentage of housing units that are vacant and low per capita income.) and the prevalence of wage theft in each jurisdiction within Hamilton County.

## **4. Methodology**

### *4.1 Introduction*

Different kinds of data require different forms of analysis. Data from local, state and federal labor law enforcement agencies undergoes descriptive statistical analysis to provide a clear picture of reported wage theft in Hamilton County at different scales. In-depth statistical analysis, including regression analysis, tests connections between wage theft and other variables in each of Hamilton County's jurisdictions.

These data also carry geographic properties. An important method of analysis includes geocoding these data into a geographic information system (GIS). The report will compare geographical distributions of this information and compare it to other types of data with the goal of discovering and explaining possible geographic and spatial distributions of wage theft across the study area. This section discusses the geospatial statistics used in the analysis of geographical data, primarily the local Getis-Ord  $G_i^*$  statistic, also known as "hotspot analysis".

Finally, the research project applies the different measures that states and municipalities in the U.S. take in dealing with both wage theft and employee reported labor law violations (see section 2.6) to Ohio and Hamilton County. This will produce a synthesized, descriptive narrative of different policies which will elucidate common themes and discuss key differences in combating wage theft across the county.

## *4.2 Limitations of the Study*

Our research questions use a specific data set, the combination of closed federal and state minimum wage violations from 2000 to 2010 in Hamilton County. These data allow the following: (1) to investigate the effectiveness of public wage remediation agencies in detail; (2) to analyze trends of public wage complaints over time; and (3) to study geographic, industrial and demographic connections among reported cases of wage theft in Hamilton County.

Several difficulties in the study area necessitate qualifications and explanations of the limits that this research must place on its analysis and conclusions. The two key limitations are unreported instances of wage theft, and the option of workers to take private action with attorneys to resolve their wage theft issues.

Due to the inherent conflicts and power relationships involved in reporting wage theft, many workers will not report incidents of wage theft (see section 2.7 of this work). For example, almost all of the workers filing wage theft claims to the state wait until they have left or are fired from their firm to report. Threats of job termination, deportation and wage cuts are implicit in many workplaces as retaliation for reporting labor law violations. Thus, many instances of wage theft go unreported to federal, state or local authorities. It is difficult to estimate exactly how many cases go unreported.<sup>2</sup>

The methodology used in this research is unable to incorporate unreported cases of wage theft into its analysis. The point of the research project is to make analyses, recommendations and policy prescriptions based on the available data set, which are

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<sup>2</sup> Survey studies attempt to discover rates of wage theft through asking low-income workers who are legally entitled to minimum wages about their weekly pay rates (Milkman, Gonzalez, & Narro, 2010). Aside from methodological questions, these studies do not discern between reported and unreported instances.

confirmed complaints to the federal and state governments. However, the absence of unreported cases does not impact the ability of the study to examine correlative factors and industrial makeup from an otherwise large and diverse data sample.

A second issue facing the research project is the set of potential wage theft instances that are handled by attorneys taking private action. As discussed in section 2.6, many states provide the option for workers to sue to recover wages, including punitive damages in some jurisdictions. Additionally, workers can sue in federal court for violations of the national laws, including the national minimum wage and overtime provisions. This gives workers an option to pursue their claim in either state or federal court, depending on several factors, including which jurisdiction can enforce a higher minimum wage (for example, Ohio's state minimum wage is higher than the federal minimum wage), and the practice area of the attorney. If private action is used to settle the most serious cases, then this research may understate the problem of wage theft.

Instances where workers take this option are not among those in this research project's databases, which include only closed wage complaints. Thus, the project does not include a certain sector of wage theft victims. However, this is not detrimental to the research project. Workers who acquire attorneys would bias a study of other types of wage theft due to structural aspects of state and federal law. If an attorney representing a client suing a business for labor law violations wins the case, the business usually pays damages as well as the attorney's fees. And because of the limited financial means of most victims of wage theft (Milkman, Gonzalez & Narro, 2010), attorneys may become dependent on winning the case in order to collect the payment of their fees from the businesses involved in the litigation. Thus, attorneys seeking private action

have a strong incentive to take cases with irrefutable evidence in order to cover the costs of representing the worker, or other cases they feel certain they will win. These kinds of cases, and out of court settlements, both usually impose contracts where both parties agree to keep silent on the number of dollars won.

This is in contrast to public enforcement agencies, including the DOL and the ODIC, which must take all complaints regardless of the difficulty of winning the cases or specific lack of evidence that particular cases may have. An analysis that combined attorney-related cases and public cases would conflate the extremely high success rates of private attorney-enforced wage remediation with the less predictable public options available to all workers. Therefore, this research project, while acknowledging the role that private attorneys play in remediating wage theft, instead focuses on the information that can be gained from the statistical and geographical analysis of reported violations to public enforcement agencies.

Finally, as discussed in the GIS analysis below, there are major assumptions made when conducting the statistical and regression analysis of jurisdictions in Hamilton County. Not all workers who live in a community work within that community. Thus, the report engages the problem of the ecological fallacy.

#### *4.3 Case Study Rationale*

The main analytical effort of this thesis is a case study of reported instances of wage theft in Hamilton County, Ohio – thus, a single case study. Due to the limitations of the explanatory power of case studies, a detailed justification of the appropriateness

of the single case study method follows. The following is largely adapted from the work of Yin (2009).

#### *4.3.1 Representative or Typical Case*

Case studies that seek to analyze the normal processes and facts of a phenomenon frequently use a typical, local subject as the object of a case study. The rationale is that the analysis of a representative case will shed light in a general and adaptable manner for other cases.

This is a prime motivation for the analysis of wage theft in Hamilton County, Ohio. Hamilton County, and its major city, Cincinnati, are broadly representative of medium-sized Midwestern US urban counties and cities. They do not represent the same class of city that major metropolitan areas, including New York, Los Angeles, and Chicago, do, or smaller municipalities and townships across the United States. With relatively normal rates of employment and race for medium-sized cities, Cincinnati and its suburbs provide an excellent opportunity to study the phenomenon of wage theft in a broadly applicable setting.

#### *4.3.2 Revelatory Case*

Another basis for a single case method is when the case examines revelatory information, previously unstudied in the literature. The study of Hamilton County is revelatory in two key areas. First, as mentioned above, studies of wage theft have either focused on the national scale or on the largest metropolitan areas in the US, due to their large populations, impact on the national economy, and clusters of scholars and

activists who study wage theft. Studies of medium-sized cities are unprecedented, and the information revealed in this case sheds light on wage theft processes that apply to a great many local governments around the nation. Secondly, the methodology for this study in the field of wage theft and labor compliance is unique. The creation of new methods to analyze new sources of data requires case study methods to work out potential problems and applications and discuss the appropriation of other methods to the new data.

#### *4.3.3 Longitudinal Case Study*

Single case studies are legitimate when conducted longitudinally, i.e. when they examine a phenomenon's changing characteristics over time in an unchanging location (Yin, 2009). This research handily meets this criterion, as it examines the distribution, frequency and location of wage theft over a period of ten years in Hamilton County.

#### *4.3.4 Conclusion*

Given the limits to case study research (unreliable results, over-generalization) researchers are wary to apply the term loosely. However, the above-discussed conditions qualify and justify the use of a single case study method for the study of wage theft in Hamilton County. The research is representative of mid-size US urban areas, contains revelatory scope and methods, and conducts longitudinal research of the study area, promising novel results for an unexamined issue.

#### *4.4 Establishing Baseline Wage Theft Levels for Comparison*

In order to compare levels and rates of wage theft in Hamilton County and its jurisdictions to national and state trends, and thus determine the significance of the problem, methods must be explored and used to estimate a baseline rate. This research explores two methods: the first compares local rates to the state rate of workers paid under the minimum wage, allowing a rough comparison. There are methodological complications and assumptions under this choice.

The second method is less useful for comparing local rates to state or national rates, but more useful for comparing local and municipal rates to the overall rate of wage theft in the county. It involves measuring the average rate of wage theft for the county per 100,000 workers and examining whether individual municipalities have rates in excess of this average, indicating higher propensities of wage theft in the region. The thesis ultimately settles upon using this method for its analysis. The following two sections briefly discuss the methods, their calculation and limitations, before settling on the county average method.

##### *4.4.1 State Rate Method*

This method uses Current Population Survey data to estimate the number of workers in Ohio who are paid beneath the minimum wage. However, there are flaws to the method. Nearly all of the state and federal wage theft claims analyzed in this report include instances of failure to pay minimum wage in addition to other violations. Estimates at the state level provide a stable base for comparison to Hamilton County.

The data reflect sub-minimum wage rates from 2002-2009, the only dates for which data are available.



Figure I illustrates a fairly steady decline in the number of workers earning sub-minimum wages until 2007, where there are gradual increases until a large increase in 2009. This could reflect a number of trends. It may represent fluctuations in the employment levels of workers exempt from the minimum wage who would earn lower than a minimum wage (including farm workers or seasonal entertainment workers, but also wait staff and temporary workers). Other exempt workers, including professionals and managers, are highly unlikely to be paid beneath the minimum wage. The data are thus probably representative of the cyclical nature of wage theft. In theory, wage theft decreases during periods of economic growth but increases significantly during

recessions when financial strains on businesses are increased and stealing wages becomes more attractive (Fluckiger, 1990).

By taking the number of workers in Ohio and dividing it by the number paid beneath the minimum wage, we can establish an estimated baseline rate of wage theft for the purposes of this research. For example, the 2005-2009 Census published that 5,418,915 people were employed in Ohio. Given the rate of subminimum wage employment in 2009 (122,000 workers, see Figure I above) this translates to a rate of 2251.37 cases of wage theft per 100,000 workers. This rate can be calculated for each year; then a comparison rate can be calculated for the county and for each municipality through combining census data. For example, if a city had 50,000 workers and 100 instances of wage theft found in the DOL data took place in that city, then its rate would be 50 cases of wage theft per 100,000 workers, significantly lower than the state rate. This could suggest that wage theft is a relatively small problem in that city.

There are, however, methodological problems with using this technique. As discussed above, many positions, including professionals, managers, wait staff, workers on small farms, and seasonal amusement workers, are exempt from the minimum wage. There is no way to tell how many employees in the data set are being paid subminimum wages appropriately or not. Also, many kinds of wage theft, including overtime, unpaid wages, and misclassification are ignored, even though the DOL and ODIC data include these instances. Additionally, discrepancies between the federal and state minimum wage further complicate the issue. A detailed analysis of exactly how many workers are exempt and how many are being underpaid is beyond the scope of this research.

#### *4.4.2 County Average Method*

The second technique is endogenous to the wage theft data and based on the smaller scale of comparing jurisdictions within Hamilton County. It is less sophisticated but less dependent on the assumptions that govern the state model. It uses the total number of wage theft claims in the county as the universe for comparison rather than the state. The total number of claims from both the state and federal data sets are tallied by jurisdiction. The number of claims per jurisdiction is divided by the number of workers in that jurisdiction to produce a wage theft rate per 1000 workers (see Table I for these calculations for the communities with claims of wage theft since 2000). The number of workers in a jurisdiction controls for the size of the workforce, so that jurisdictions with high populations (such as Cincinnati) do not have undue influence on the analysis. This produces population controlled, standardized rates appropriate for comparison. These rates can then be subjected to statistical analysis. Communities with above-average or above-median rates are thus indicative of problematic, high levels of wage theft. According to this analysis, jurisdictions with above the average rate of claims of wage theft per 1,000 workers have significant rates of wage theft. Some of the communities with the highest rates include Evendale, Woodlawn, and Springdale.

This technique is the primary technique chosen for this research. This section serves only to detail the methodology behind computing the baseline comparisons for the wage theft data. The data undergoes a detailed statistical analysis in section five. Special emphasis is placed on the communities described above, with above-average rates of wage theft.

#### *4.5 Regression Analysis*

As discussed above, this thesis takes advantage of the quantitative nature of the wage theft data collected and uses a regression analysis to explore suspected factors and their relationship with wage theft in Hamilton County. Data collected from the US Census constitutes the regressors used to create the analysis. These regressors include proxies for poverty, including wages, high school education, the percentage of residents under the poverty line, and others (these are discussed in further detail in the analysis section).

The regression model is calculated through SPSS, through a backward regression method, which ‘prunes’ ineffective regressors and keeps statistically significant ones, maximizing the explanation of variability while eliminating ineffective measures. The dependent variable is the number of wage theft incidents in a municipality (normalized by the number of workers in that population). The goal of the regression analysis is to determine whether the chosen battery is effective at explaining the variation of wage theft amongst different municipalities in Hamilton County, and if that explanation is statistically significant.

#### *4.6 Geospatial Statistical Methods*

For the purpose of analyzing the density and clustering of wage theft incidents and workers, this thesis makes use of the local Getis-Ord  $G_i^*$  statistic, a particular geospatial statistical technique better known as hotspot analysis. Getis and Ord (1992) developed this statistic and it is a combined measure of cluster analysis and spatial autocorrelation. The procedure analyzes spatial data and determines the correlation of

a variable's value in one area with that variable's value in surrounding or adjacent areas. In effect, it creates a correlation value over space to discover areas of particular weight and significance for a variable.

The Getis-Ord  $G_i^*$  statistic is a z-score; thus, it automatically carries a test of significance for each jurisdiction. These resulting z-scores and/or  $p$ -values can then be mapped, enabling greater illustration of the statistical significance of its findings, and distinguishing spatial correlations at the 90 percent, 95 percent and 99 percent level of significance (Wong and Lee, 2005). Mapping the resultant z-scores and/or  $p$ -values provides visual verification of the hotspots of a particular variable: large z-scores across adjacent areas indicate significant clustering of high values of a variable (or hotspots), and small z-scores across adjacent areas indicate significant clustering of low values (cold spots). The analysis assigns a  $p$ -value and compares it to a randomized hypothesis in conducting tests for significance (ESRI, 2011).

For this analysis, the spatial relationship is conceptualized through a contiguous polygon method. With contiguous polygons, the impact of one event decreases as the distance to other events increases (this operates under the assumption that the variables causing wage theft are contained in individual jurisdictions). The program expands a hotspot as it examines jurisdictions that have statistically significantly higher rates of wage theft than their neighbors. It effectively limits and cordons these hotspot areas of statistical significance.

These techniques are used to find clusters of both wage thieving businesses (sites of wage theft) and clusters of workers who suffer from wage theft (ZIP codes and jurisdictions). This analysis is used to identify the jurisdictions and regions of the county

that suffer disproportionately from wage theft and to recommend scale-appropriate techniques in the policy section.

Geospatial statistical techniques have their weaknesses. According to Pavloskya, “proximity generates autocorrelation in spatial distributions and this violates fundamental assumptions of data independence in conventional statistics” (Pavloskya, 2009). Fortunately, the techniques used are statistically sophisticated and take local proximity into account, providing theoretical justification for their application (Getis and Ord, 1992).

**Table I. Count of All Violations by Jurisdiction (Both Data Sets)**

Jurisdiction	No. of Wage Claims	No. of Workers in Jurisdiction	Claims per 1,000 workers
Addyston	2	236	8.47
Amberley Village	2	1,602	1.25
Anderson Township	37	22,115	1.67
Arlington Heights	2	387	5.17
Blue Ash	62	6,923	8.96
Cheviot	3	4,630	0.65
Cincinnati	615	151,758	4.05
Cleves	1	1,229	0.81
Colerain Township	47	31,971	1.47
Columbia Township	11	3,276	3.36
Deer Park	3	3,227	0.93
Delhi Township	14	15,783	0.89
Elmwood Place	2	1,094	1.83
Evendale	36	1,514	23.78
Fairfax	5	897	5.57
Forest Park	41	9,312	4.40
Glendale	2	1,060	1.89
Golf Manor	2	1,735	1.15
Greenhills	2	1,869	1.07
Green Township	36	29,141	1.24
Harrison	16	4,498	3.56
Harrison Township	6	6,757	0.89
Indian Hill	1	2,433	0.41
Lincoln Heights	5	1,518	3.29
Lockland	10	1,620	6.17
Loveland	7	5,523	1.27
Miami Township	2	6,759	0.30
Madeira	7	4,522	1.55
Mariemont	5	1,466	3.41
Montgomery	18	4,725	3.81
Mount Healthy	11	3,001	3.67
Newtown	8	1,879	4.26
North Bend	0	270	0.00
North College Hill	12	5,613	2.14
Norwood	50	10,744	4.65
Reading	27	5,469	4.94

Saint Bernard	11	2,414	4.56
Silverton	6	3,051	1.97
Sharonville	58	7,060	8.22
Springdale	65	4,916	13.22
Springfield Township	25	18,810	1.33
Sycamore Township	43	9,713	4.43
Symmes Township	16	8,023	1.99
Whitewater Township	8	2,984	2.68
Woodlawn	19	1,398	13.59
Wyoming	2	4,066	0.49
		Average:	3.81

US Census, 2011

## **5. Analysis**

### *5.1 Descriptive and Statistical Analysis of Data Sets*

The data set encompasses 1,607 instances of wage theft in Hamilton County, from 2000 to 2010. Of these, 1,347 of the cases originate with the DOL, and 260 of the cases with the ODIC. For this section, the data from the federal government and the state of Ohio are first analyzed separately for the purpose of relaying a clear understanding of the differences between the two data sets, and of potential factors leading to reporting of cases. The data are then analyzed together for the purpose of generating a unified understanding of the data set. The data are treated together for the purposes of regression and GIS analysis.

#### *5.1.1 ODIC Data*

The ODIC data set has a total of 260 cases, which makes up around sixteen percent of the total data set. This data set includes all cases in Hamilton County from 2000 to 2010, as opposed to the federal set which contains only completed cases.

The ODIC set is smaller for a number of reasons. First, the prominence of federal institutions and the dominance of federal control of the field likely mean that most workers will contact the DOL first. The ODIC also has a smaller budget and resources, including staff, for pursuing wage theft claims. ODIC data, for example, must be entered by hand. The DOL, by contrast, is automated for data claims and has significantly greater physical resources.

The ODIC data set is unique in several ways. Many of the cases have been terminated by the complainant for unknown reasons, and others have been transferred

to the DOL or to the Ohio attorney general to be settled in court. Because the ODIC data set is so much smaller, it is subject to greater variability than the federal data set. For instance, one large case where several workers file claims simultaneously can have a significant impact on the overall shape and range of the data source. One advocate group in particular was mentioned in several of the claims as supporting the cases of workers. By filing complaints for several workers several times, one organization can have an enormous influence on overall noncompliance rates in the county.

The smallest determination amount of the ODIC data set (besides \$0.00 for denied claims) was \$39.00, and the largest was \$81,602.64 (split between thirteen workers who filed jointly). In total, ODIC returned \$540,253.50 to Hamilton County workers from 2000 to 2010. The mean determination amount was \$3,601.69, and the mode was \$660.00, while the median was \$829.72.

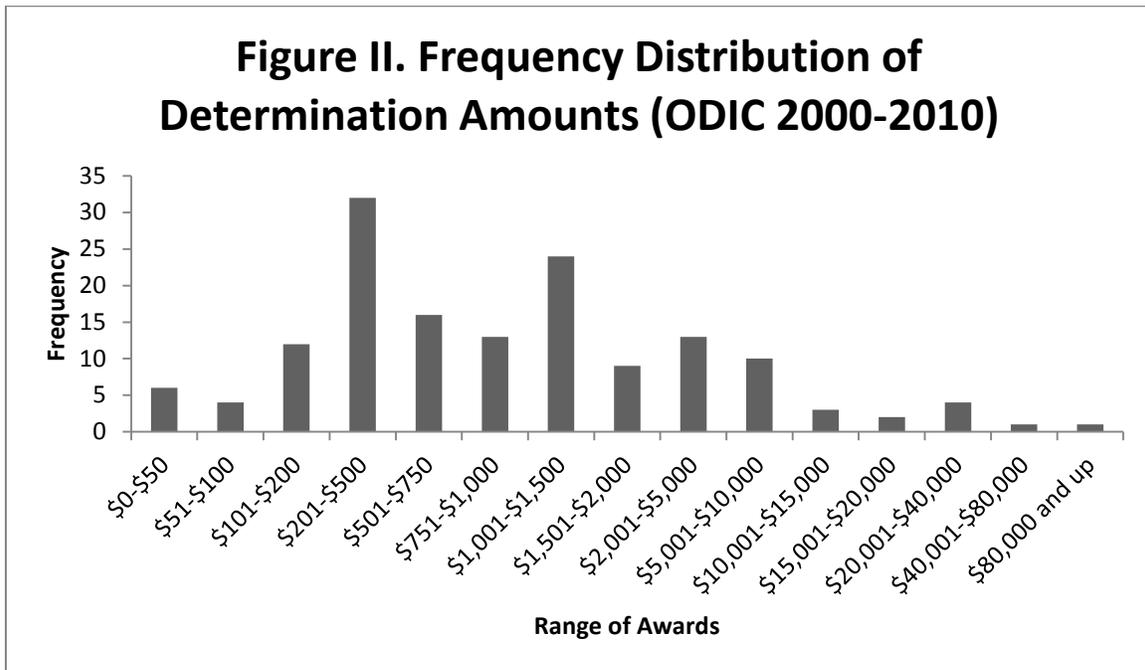
When denied claims removed from consideration, a majority of the ODIC determination amounts fall between \$750 and \$1000 (see Table II), and 93 percent of the data claims fall under \$10,000 dollars. The plurality of cases falls in the \$200-\$500 range.

<b>Table II. Determination Amounts (ODIC 2000-2010)</b>		
Range	Frequency	Cumulative %
\$1-\$50	6	4%
\$51-\$100	4	7%
\$101-\$200	12	15%
\$201-\$500	32	36%
\$501-\$750	16	47%
\$751-\$1,000	13	55%
\$1,001-\$1,500	24	71%
\$1,501-\$2,000	9	77%
\$2,001-\$5,000	13	86%
\$5,001-\$10,000	10	93%
\$10,001-\$15,000	3	95%
\$15,001-\$20,000	2	96%
\$20,001-\$40,000	4	99%
\$4,0001-\$80,000	1	99%
\$80,001-\$85,000	1	100%
	150	100%

Many of the cases come from individual worker filings and are for relatively small sums. The larger cases (those above \$20,000) typically result from efforts of workers centers and representation of joint filings involving many workers; these inflate the statistics of central tendency and are a very small part of the overall picture. Additionally, concentrated efforts to represent discriminated workers and encourage them to file joint complaints can enlarge the overall effectiveness of the state agency in collecting money for workers.

A histogram further elucidates the distribution of determination amounts for the ODIC data. A bimodal distribution is apparent. The \$200-\$500 range and \$1000-\$1500 range are by the far the most populated ranges, with a positive skew trailing off to the right.

**Figure II. Frequency Distribution of Determination Amounts (ODIC 2000-2010)**

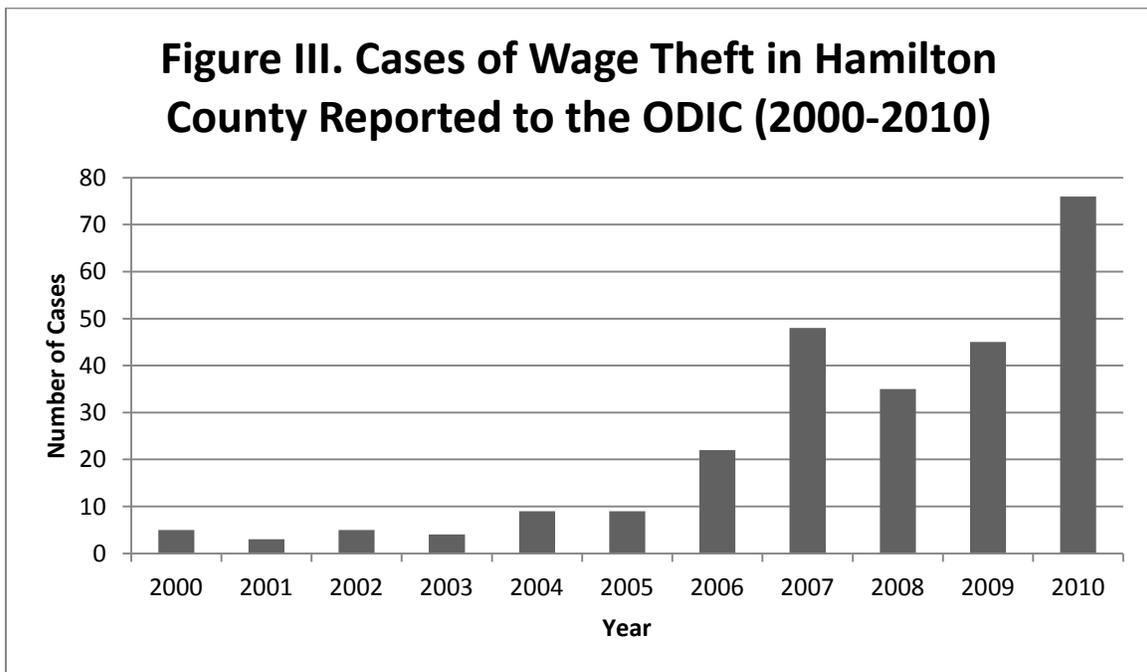


This skew represents a small number of cases in excess of \$40,000 in determination monies. Again, a relatively small number of very large claims filed jointly by multiple workers cause this distortion.

The instances of reported wage theft cases to Ohio state authorities demonstrate a clear trend over time. The data indicates that from 2000 to 2005 the average annual number of reports was around 5.8. Beginning in 2006 the rates began to dramatically increase, reaching a high of 76 reported cases in 2010 (see Figure III). This may be due to a number of reasons. Instances of wage theft may have increased over time, but the cause of the increase in 2006 is not obvious. The trend necessarily reflects a rise in the number of workers willing to report wage theft, but that may not be a sufficient impetus. It may also mirror the rising unemployment rate caused by the recession which began in 2007. Nearly all of the workers reporting wage theft in the data set were

no longer employees at the firms they were accusing of wage theft at the time of filing the report. Without the threat of retaliation, they may have been far more comfortable filing complaints for back wages. Thus, more unemployed workers may have been willing to take a chance at recouping their pay.

Another potential explanation may be political. 2006 marks the year Democrats took the governorship in Ohio. Democratic administrative and budgetary control over the state agencies could possibly have resulted in increased impetus and funding for the department responsible for responding to wage theft. Political appointees may follow specific ideologies. Federal reports indicate that administration changes can significantly impact the performance of labor regulating agencies, including distortions in the number of cases pursued (Government Accountability Office, 2009c).



None of these explanations is certain, but it is highly likely that the difficulties associated with the recession influenced many workers to turn to reclaiming stolen wages. These data, analyzed in combination with federal time series data in section 5.1.3, will provide a fuller view of total levels of wage theft over time and complete the context surrounding the issue in Hamilton County.

The time it takes Ohio to close a case varies widely. Around 8.5% of the cases are closed within a month of reception, and a little over 25% are closed within two months (sixty days).

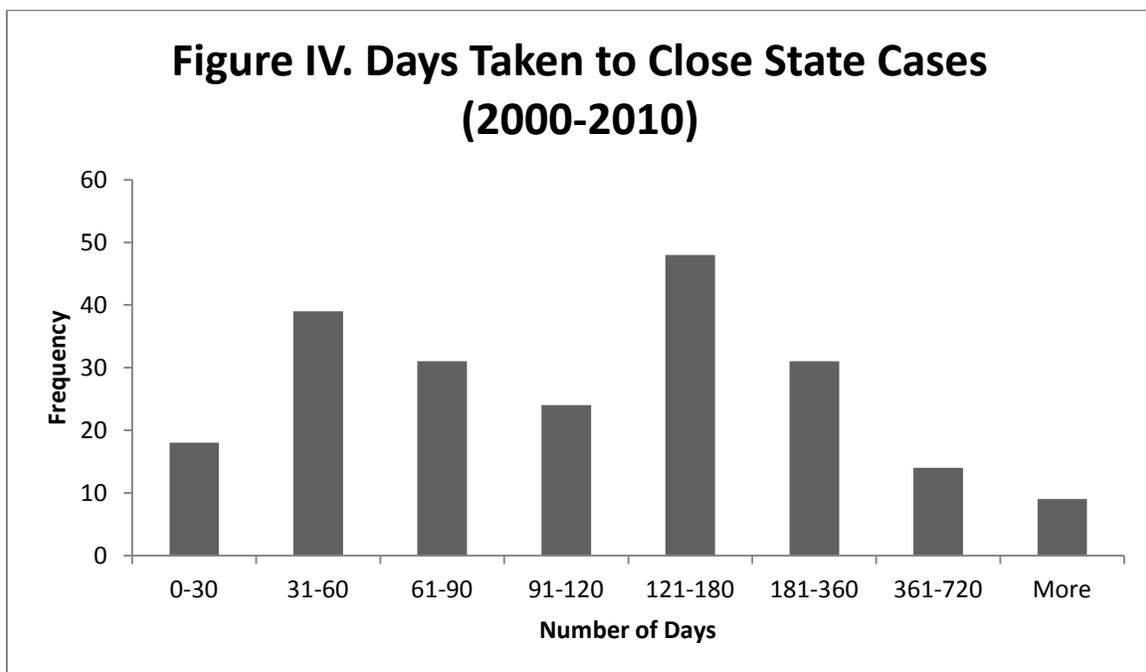
Range	Frequency	Cumulative %
0-30	18	8.41%
31-60	39	26.64%
61-90	31	41.12%
91-120	24	52.34%
121-180	48	74.77%
181-360	31	89.25%
361-720	14	95.79%
More	9	100.00%

Not until the four month mark are a majority of wage theft cases closed by the state of Ohio. Additionally, excessive waits of even longer time periods exist. Nearly eleven percent of cases are not closed after six months, and five percent of cases take one year, two years or even longer.

Some cases may require longer time periods, depending on the number of wage claimants involved, the size of the complaint in dollar terms, the size of the business and the willingness of the business to settle the claim or resist. The investigative process requires the state agency to audit the records of the business and to compare

those records to those kept by the worker. This labor-intensive process does not seem to justify some cases taking over two years (though at least one of these cases fell through the bureaucratic process and was not formally closed despite being finished).

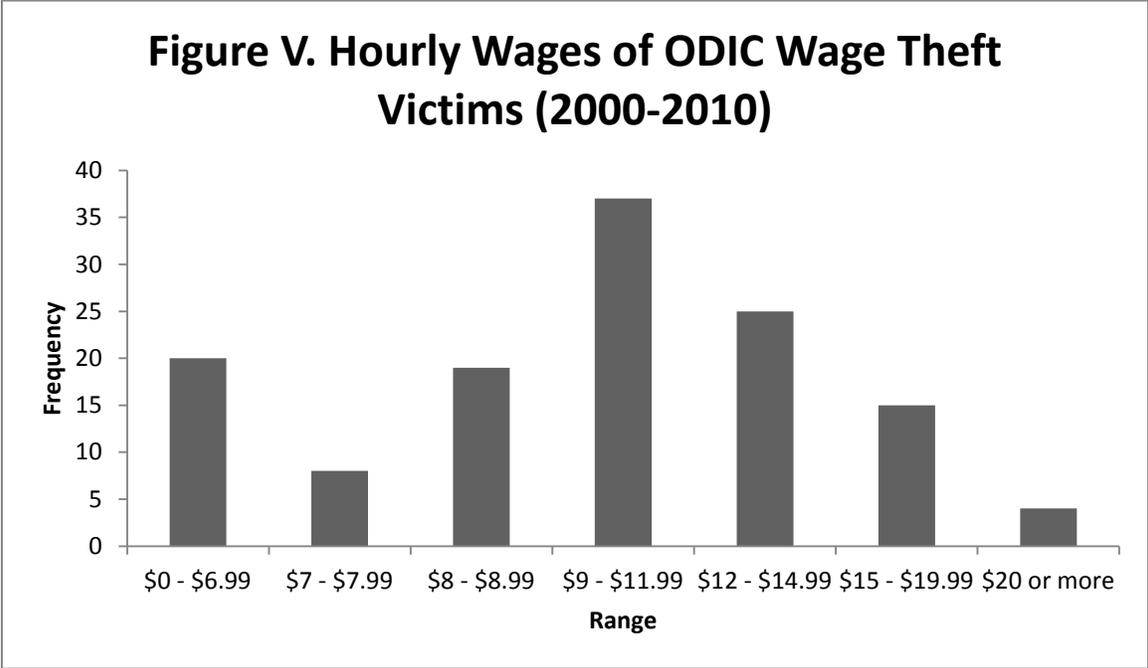
Again, a histogram provides insight into the amount of time the state takes to close a case. The most common time frame is three to four months, but the curve is not normally distributive (Figure IV). A majority of instances are resolved in under four months.



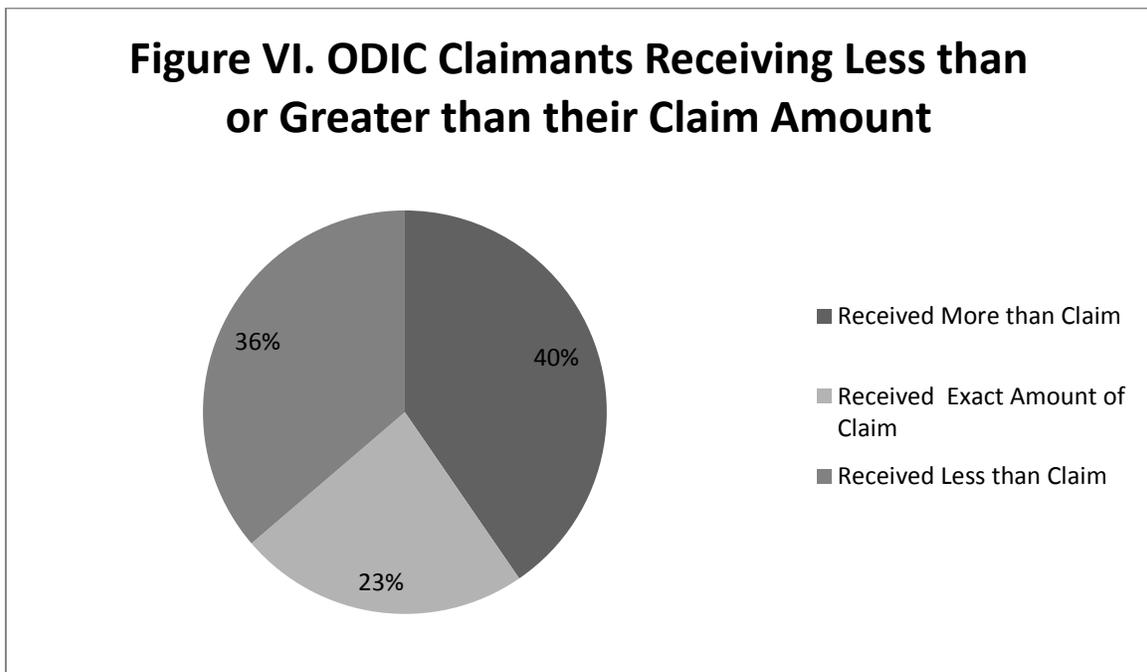
The overwhelming majority of state cases (over 99%) are filed by workers who are no longer employed by their business. This indicates that a friendly relationship between a worker and a business after wage theft is uncovered is unlikely. Either workers are fired in retaliation for reporting the wage theft, or workers wait until they leave the job to attempt to get wages back from businesses.

Range	Frequency	Cumulative %
\$0 - \$6.99	20	15.63%
\$7 - \$7.99	8	21.88%
\$8 - \$8.99	19	36.72%
\$9 - \$11.99	37	65.63%
\$12 - \$14.99	25	85.16%
\$15 - \$19.99	15	96.88%
\$20 or more	4	100.00%

The mean wage for a victim of wage theft reporting their case to the state of Ohio was \$10.50 from 2000-2010. The median wage was \$10.00. The standard deviation of wages was \$4.20, and the range of wages falls between the minimum wage and \$26.93. Interestingly, a majority of workers reporting wage theft to the state make over the Ohio state minimum wage. This may indicate that high-wage workers make up a larger proportion of wage theft victims than the literature realizes. It may also reflect that more workers in general earn above-minimum wages.



Finally, this section discusses the determination difference of the state cases, or the difference between the dollar amount workers contended they were owed and the actual amount they were paid. Only 193 of the state cases had enough information to determine this data category. Of state cases with complete data, 23.54 percent received the exact amount they claimed. Around 40 percent received more than their claim, and the remaining workers (36 percent) received less than the amount they claimed they were owed. There is no statistically significant relationship with time, meaning there is no effect from different political parties in charge. This suggests that the determination amount is based on individual cases, not the efforts of the agency.



Again, these results are based on the work of state investigators and auditors as they examine the wage records of employees and businesses. Discrepancies are expected on both sides, but the high number of cases where workers recover the exact

amount of money they claimed indicate that workers are fairly effective at calculating the amount of wages they are owed.

Because large values at both ends of the spectrum distort a measurement of cash value, a percentage count is used (for example, one case where nearly \$70,000 was awarded shows as \$70,000 above the claimed value because no amount was entered on the form). Only 113 of the state cases have enough data to determine this information.

Of workers who received under the amount they claimed, the average reduction was 48 percent. Of workers who received more than their claim amount, the average increase was 119 percent, but this includes a few major outliers. Twenty four workers did not experience a change between the amount they claimed and the amount they won. This is in direct contrast to the federal data set. Of over 1,400 cases, only two feature a determination amount that differs from the amount claimed.

Several other factors limit the effectiveness and validity of these calculations. Very few of the cases have the requisite data (both the amount the worker claimed and the amount they actually won). In most cases, the amount claimed was merely left blank and only the amount awarded is listed. This registers as a 100 percent increase of the claimed amount. Thus, the remainder of this research will tend to focus on determination amounts, which are more reliable and provide more data.

The ODIC data, while significantly smaller, allows for comparisons with the federal data and for the formulation of hypotheses as to why some workers would contact the state and others the federal government. Patterns of state responses and rates of effectiveness are also discussed later in the thesis.

### 5.1.2 DOL Data

Data from the Department of Labor (DOL) comprise the bulk of the analysis of this project. With 1,347 collected cases, they make up fully 84% of the data. This is clearly representative of the dominant role the DOL plays in combating wage theft in the US. However, this perception may be slowly changing (see Figure XIV). The average amount of money returned to workers by the DOL is \$988.37, but again, this number is inflated by several large cases. A more accurate number may be found in the median, which is \$217.50. The mode is \$206.00, which likely results from a large group settlement where several workers, working identical hours, filed claims at the same time. Additionally, the range varies considerably more than the state data: the smallest determination amount was \$5.08, while the largest was \$111,137.02. This results in a range of \$111,131.94. Finally, the DOL has returned \$698,774.44 to workers from 2000 to 2010.

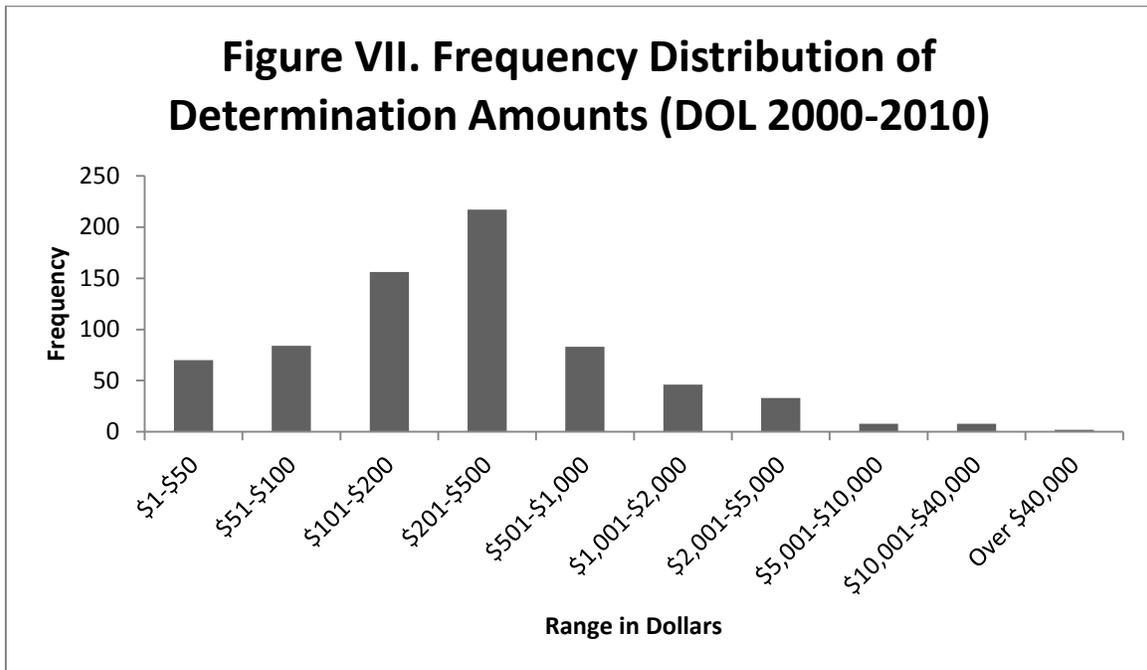
The federal data differ from the state data in several ways. First, the determination amount is always equal to the claimed amount; thus, for the federal data, there is no determination difference to compute or analyze. Workers either received the amount they asked for, or their claim was denied. There is no deviation. Some claims do not list a determination amount or any indicator of the size of the claim.

Additionally, the federal data include the industry for each violating firm. This allows for a detailed analysis of industry-wide compliance in Hamilton County (allowing for econometric methods of analyzing noncompliance rates of labor laws). These data play a prominent role in the GIS analysis below.

Like the state data, the DOL determination amounts cluster near the left of the curve, with a relatively few larger cases skewing the data to the right (only 707 of the cases feature a non-\$0 determination amount). A full 75 percent of the wage claims are under \$500, and 90% fall under \$2,000. These are relatively small amounts. To put a job on the line and engage in a complicated legal process for amounts this low indicates that while some claims are large, in general these may be people for whom sums this size are important.

<i>Range</i>	<i>Frequency</i>	<i>Cumulative %</i>
\$1-\$50	70	9.90%
\$51-\$100	84	21.78%
\$101-\$200	156	43.85%
\$201-\$500	217	74.54%
\$501-\$1,000	83	86.28%
\$1,001-\$2,000	46	92.79%
\$2,001-\$5,000	33	97.45%
\$5,001-\$10,000	8	98.59%
\$10,001-\$40,000	8	99.72%
Over \$40,000	2	100.00%
	707	100.00%

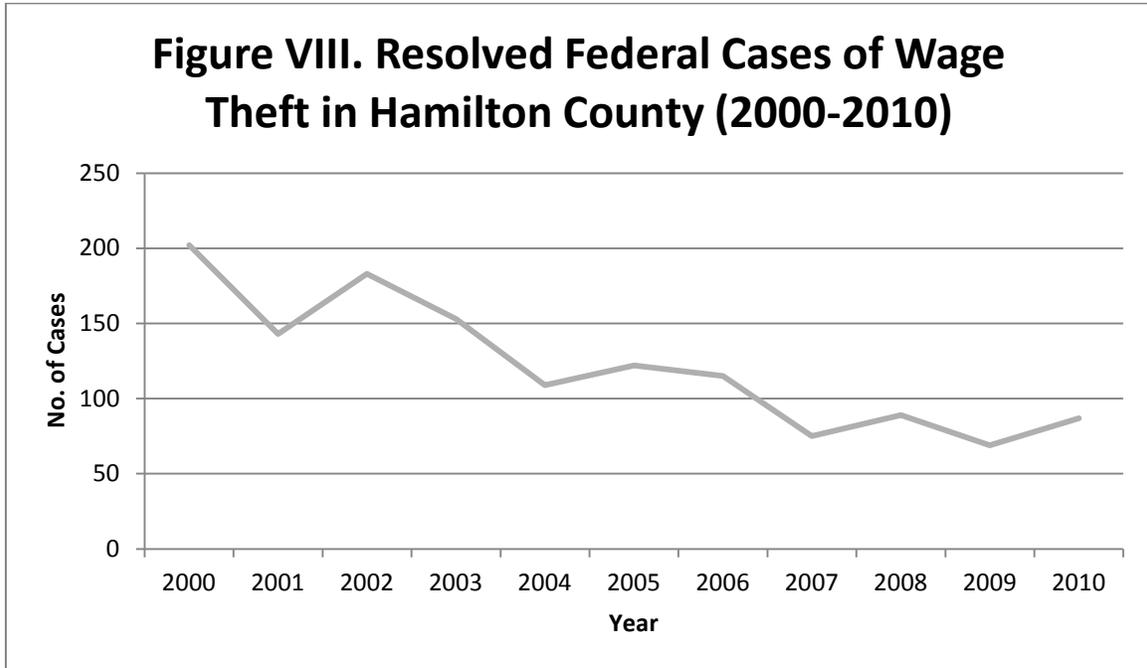
A histogram confirms this and provides more information. Several large cases, representing joint filings by groups of workers, trail off to the right, skewing the distribution overall. Otherwise, it appears remarkably normal. The sheer number of relatively small amounts (\$201-\$1,000) demonstrates how important these sums are to the workers attempting to regain them. At a \$7 minimum wage, \$500 represents around 71 hours of work, or nearly two weeks.



A time series analysis of wage cases presented to the DOL indicates a severe drop in reported cases. The overall number of cases resolved by the DOL has decreased sharply from 2000 to 2010. Overall, the figure has dropped nearly 50 percent in the past decade, with a slight increase from 2009 to 2010 (Figure XVIII). Literature discussed in section 2.4 may shed some light on this phenomenon, which is especially puzzling given the increasing rate of cases filed at the state level. According to the Governmental Accountability Office, from 2000 on the administration of the DOL was inefficient in securing wages for workers, or at enforcing critical safety laws. In many cases, managers pressured investigators to ‘go easy’ on businesses in violation of labor law. Political or ideological considerations may have played a role.

It is unlikely this drop records a decrease in the rate of total wage theft being committed in Hamilton County, as the state collection rate has increased sharply over

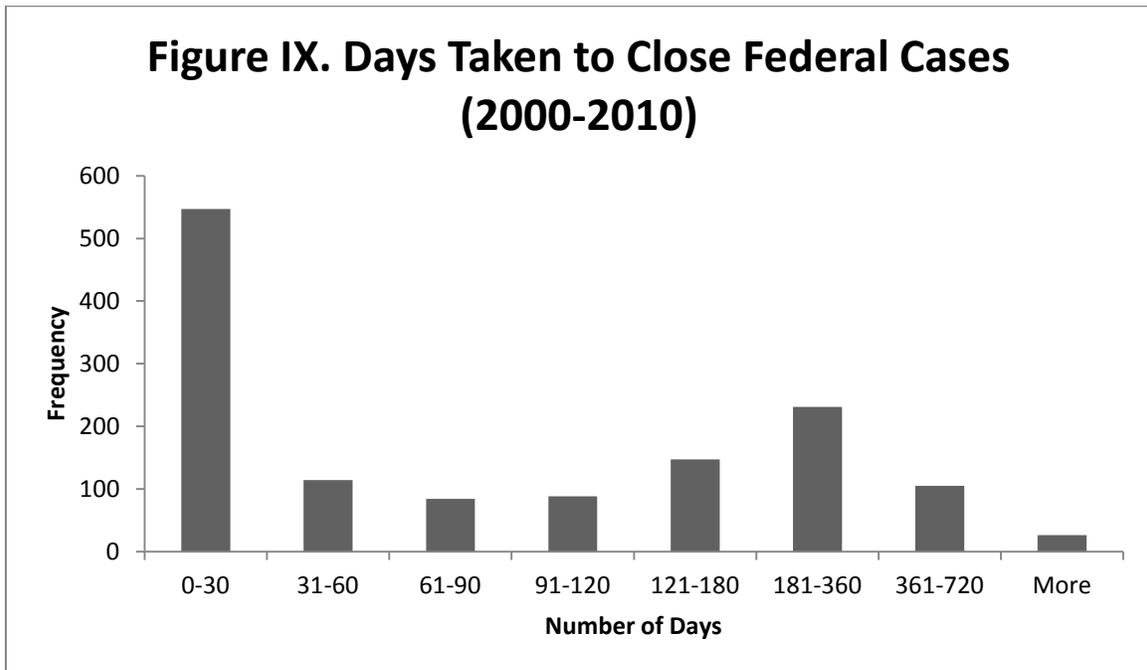
the same period. It is possible that workers strategically choose which government agency to use.



The DOL is able to process cases more quickly than the state of Ohio (Table VI). Almost 40 percent of cases from 2000 to 2010 were closed within a month of their reception, and 50 percent of the cases were closed in two months. However, a sizeable proportion of cases take significantly longer to close – marginally, only an additional five percent are closed within three months, and only an additional seven percent are closed within four.

<b>Table VI. Days to Close Federal Cases (2000-2010)</b>		
<b># of Days</b>	<b>Frequency</b>	<b>Cumulative %</b>
0-30	547	40.76%
31-60	114	49.25%
61-90	84	55.51%
91-120	88	62.07%
121-180	147	73.03%
181-360	231	90.24%
361-720	105	98.06%
More	26	100.00%

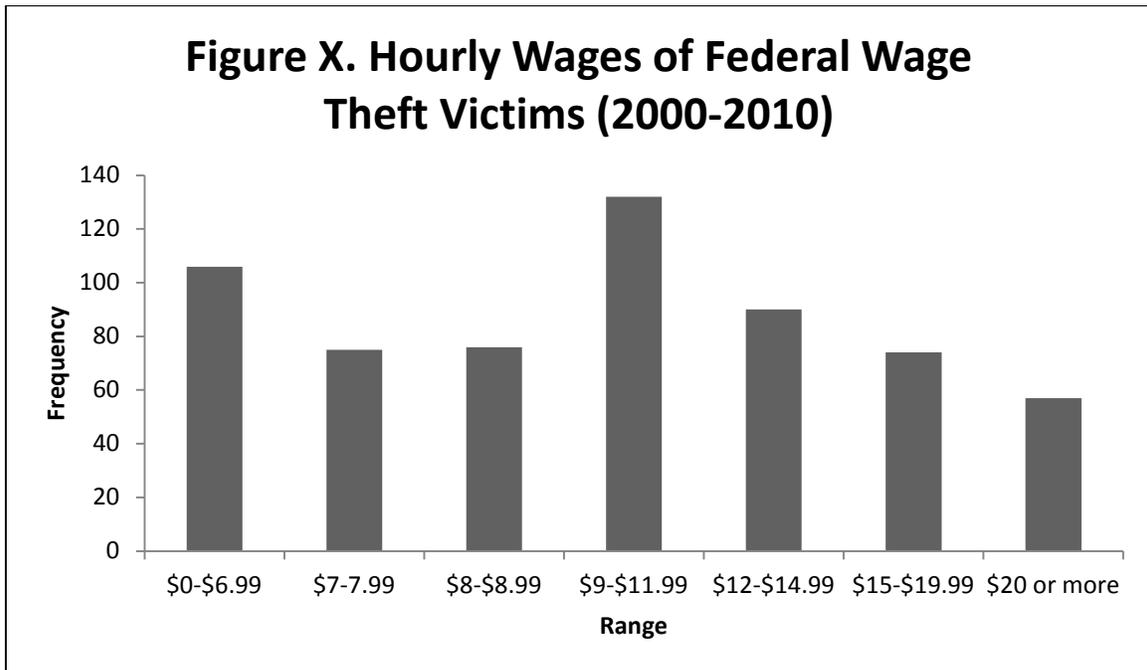
Figure IX, below, illustrates the same data in histogram fashion. It places a heavy emphasis on the high number of cases that are closed early in the process. Significantly, this is not because these cases result in determination amounts of zero; of federal cases closed within a month, fully 78 percent of them resulted in determination amounts equal to claimed amounts for the workers. The federal government's heavy resource base, economies of scale, and large constellation of locations probably plays a heavy role in this efficiency. Additionally, these early cases may be open-and-shut in the sense that some workers may have important documents and information necessary for a speedy wage claim. Finally, perhaps knowledge of a federal investigation into a wage claim frightens some businesses into complying with the investigation by offering needed documents quickly or settling the matter immediately. They can only harm themselves by hampering the investigation, and have everything to gain by speeding it or resolving it quickly by settling with the worker, though frequently the firm bargains to pay under the amount that the worker claims is owed. However, in these cases, most workers receive their asked for wages.



Like the state cases, the DOL data set confirms that the plurality of workers using the agency to claim back wages earn between \$9 and \$12 hourly in wages. Around 35 percent of state and federal wage claimants earn above \$12 an hour. This may indicate that wage level and thus probably income do not separate workers who file with the federal government and workers who file claims with the state government.

Range	Frequency	Cumulative %
\$0-\$6.99	106	17.38%
\$7-7.99	75	29.67%
\$8-\$8.99	76	42.13%
\$9-\$11.99	132	63.77%
\$12-\$14.99	90	78.52%
\$15-\$19.99	74	90.66%
\$20 or more	57	100.00%

A histogram of the wage data demonstrates that besides the \$9-\$12 range, most of the other wage brackets make up relatively similar percentages of the remainder with the over \$20 trailing off at the far end (Figure X).



Interestingly, the group that would be suspected to be largest, those making the federal minimum wage (under \$7 until 2009, then under \$8), though sizable, is not the majority or even the plurality of workers. Together with other low wage workers, though, they do indeed make up the largest categories. This indicates that wage theft victims range primarily from minimum wage up to slightly higher wage levels.

The DOL data set is a rich resource of information regarding wage theft in Hamilton County. The previous two sections have attempted to provide a clear picture of the shape of the separate data sources. The next section describes the joint data together, in preparation for the GIS analysis to follow.

### 5.1.3 Combined Data

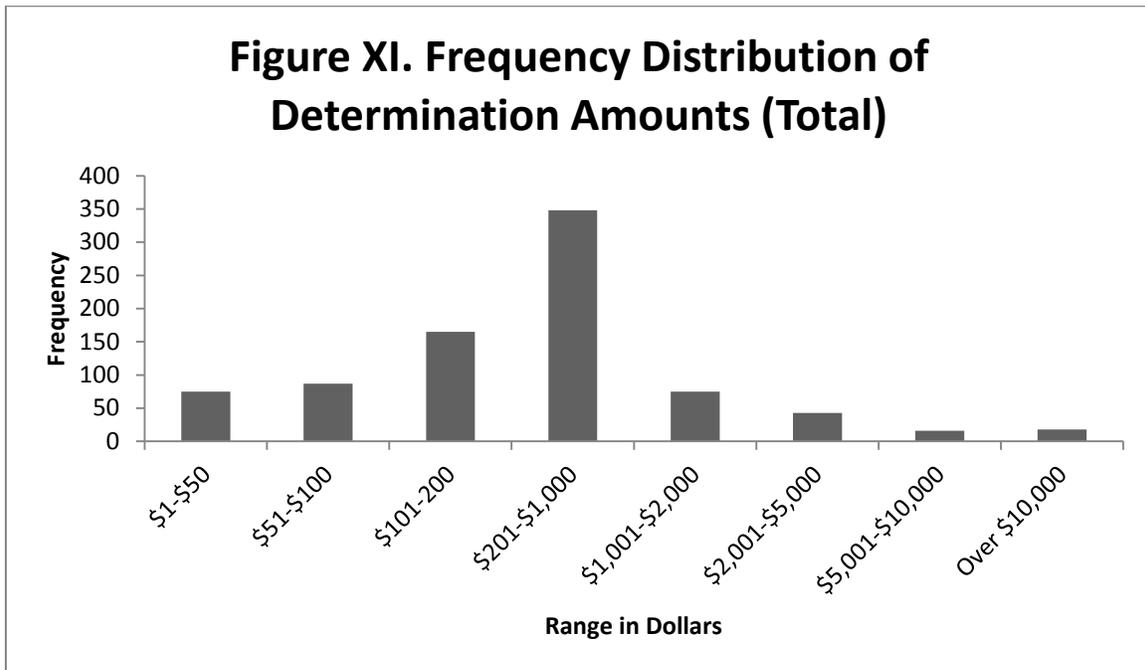
This section of the paper describes the statistical structure of the agglomerated state and federal data. The analysis of the total available information provides a general view of the entire phenomenon of reported wage theft in Hamilton County, while allowing a comparison of total counts to component counts of state and federal instances.

The combined wage theft data features a low of \$5.08 for returned wages and a high of \$111,137.02. This results in a total range of \$111,131.90. The calculated mean is \$1,382.88, and the median wage amount is \$262.88, a much lower amount than the mean, indicating that the wage theft totals are weighted to the left. Overall, the two departments returned \$1,128,839.70 to workers from 2000 to 2010. Of all the cases, 939 resulted in findings, and only 112 of them were for \$0.00.

<i>Range</i>	<i>Frequency</i>	<i>Cumulative %</i>
\$1-\$50	75	9.07%
\$51-\$100	87	19.59%
\$101-200	165	39.54%
\$201-\$1,000	348	81.62%
\$1,001-\$2,000	75	90.69%
\$2,001-\$5,000	43	95.89%
\$5,001-\$10,000	16	97.82%
Over \$10,000	18	100.00%
	827	100.00%

The vast majority of cases falls under the \$201-\$1000 range, with larger, group cases making up the upper ranges and slightly smaller amounts making up the remainder. The data approximate a normal distribution as well.

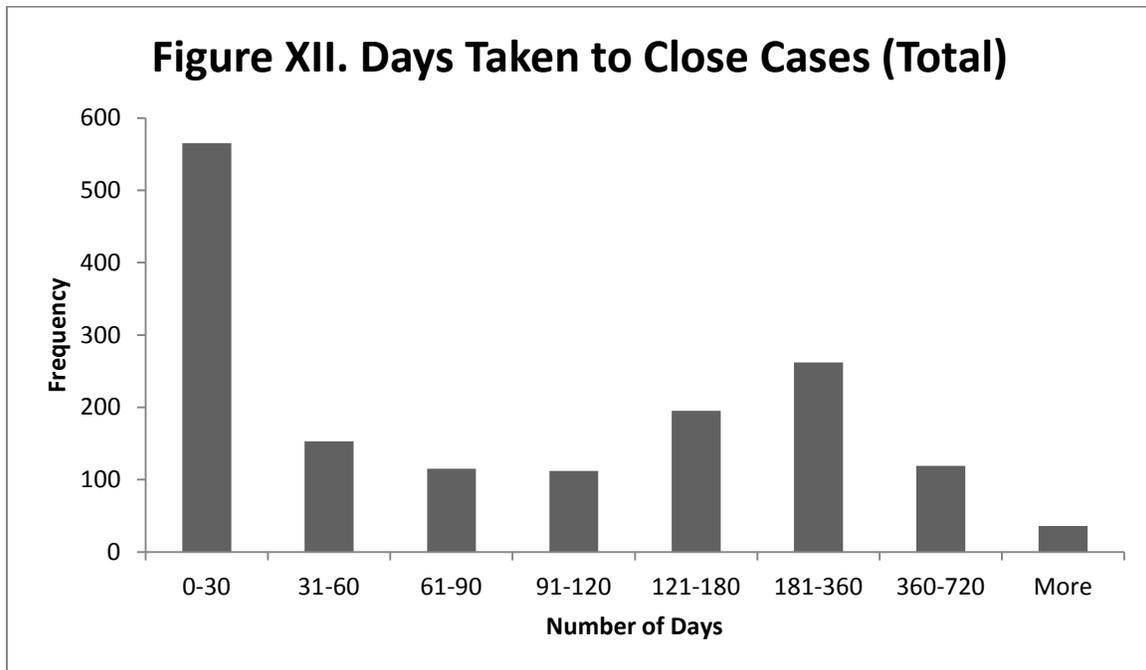
**Figure XI. Frequency Distribution of Determination Amounts (Total)**



Over one-third of the combined cases were finished within one month. A majority of cases is solved within three months (give or take a few days). A full ten percent of cases took over six months to solve. Though some of the state cases are still open, they are an insignificant fraction of the total. Cases taking over one year (three percent) are likely to be group cases, or complicated and litigated matters.

# of Days	Frequency	Cumulative %
0-30	565	36.29%
31-60	153	46.11%
61-90	115	53.50%
91-120	112	60.69%
121-180	195	73.22%
181-360	262	90.04%
360-720	119	97.69%
More	36	100.00%

Figure XII displays the entire distribution. Besides the first two month categories, again the data appears to approximate a normal distribution, with a one-half year to a full year serving as a median. These statistics are not very different from the component parts for the federal and state data.



The wage distribution looks similar to both the federal and state components, in that low-wage workers (\$7.99 and up) together make up the largest wage distribution effected. With a mean of \$10 per hour, it seems that low wage workers are disproportionately affected by wage theft in Hamilton County, though the significant number of workers in upper ranges indicates that higher earners are not immune. Additionally, this analysis ignores workers complaining to the law enforcement agencies that are paid through salaries (as most of these workers are exempt from minimum

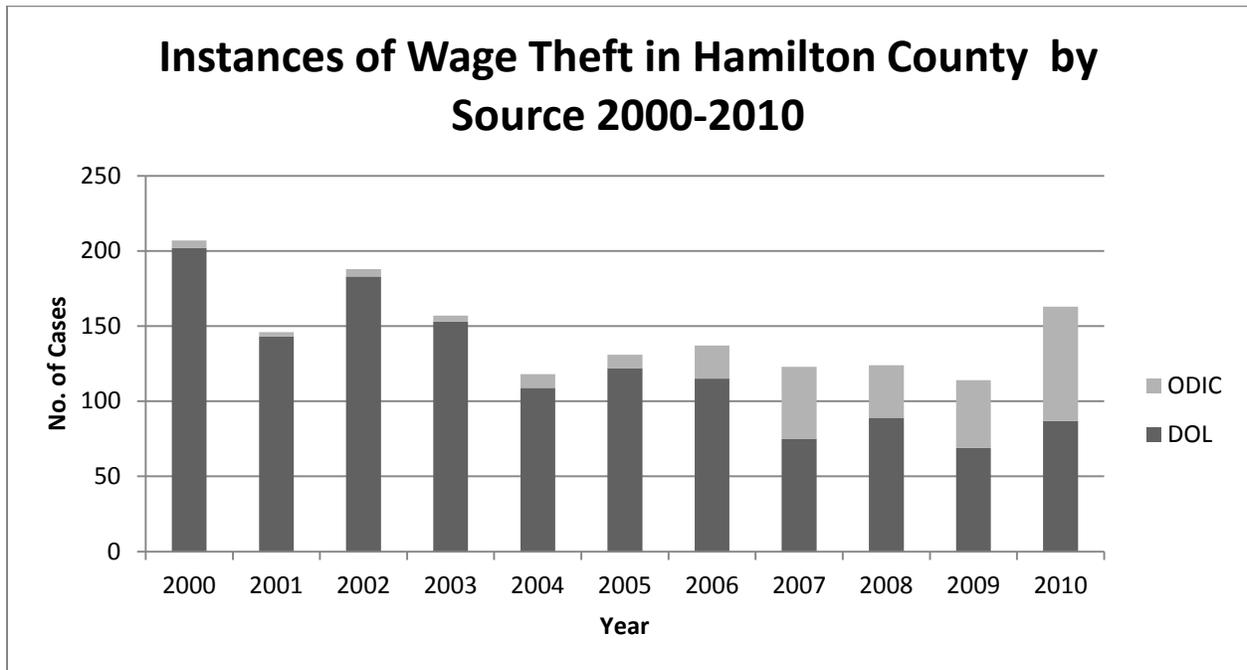
wage and overtime laws. Only twelve were included in the total data set, and they have been removed from analysis).



The overall trend of reported instances of wage theft in Hamilton County over the past ten years has been downward (see Figure XIV). Annual cases have dropped from a high of just over 200 to just over 150 between 2000 and 2010, respectively. Interestingly, the percentage of cases handled by the DOL decreased steadily, along with the overall number of cases (although there has been a slight increase from 2009 to 2010), while the number of cases handled by the state of Ohio steadily increased. It seems unlikely that these trends are isolated to the ten-year period that is the focus of this study, and more data would presumably be needed to make greater generalizations. Regardless, it seems clear that the DOL has decreased its capacity or interest to enforce labor law in Hamilton County. Similarly, the state of Ohio appears to

have experienced an increase in the cases it handles, with an underlying increase in capacity. As discussed above, this may be a political development, as Republican control of the executive branch of the federal government became established and entrenched in 2000 and 2004, respectively. Likewise, a Democratic administration in Ohio in 2006 may contribute to the growing number of cases handled by the state of Ohio from 2006 to 2010. President Obama's election in 2008 may explain the slight uptick in cases handled in 2009 and on. Another factor may be instances of transferred cases between the federal and state government, which is not uncommon.

The overall declining trend in the total number of wage theft instances could possibly be explained by declining rates of wage theft, though the overall trend has been fluctuating despite an overall decrease. Additionally, the rate of wage theft could be unchanged or even increased, with different populations choosing to report due to the poor state of the economy, not to mention variance in which level of government workers choose to use. The high unemployment rates in 2008 on may also contribute to limiting reported instances.



## 5.2 Census Correlation and Regression Analysis

Analyzing the variables that relate to and correlate with wage theft can help policy makers and local officials recognize whether their employees could be at risk of wage theft. Exploratory regression analysis can help future research by narrowing and limiting relevant variables. This section of the thesis creates a multiple regression analysis to discover what variables are related to wage theft in Hamilton County municipalities and townships. Data were taken from the US Census Bureau for every community with at least one wage violation from 2000 to 2010. The data are agglomerated from 2005-2009, covering the latter half of the time period under examination, as the majority of cases occurred during this time period. This section briefly outlines each of the variables used, including a justification for their inclusion, a

methodological description of the backward regression procedure used, and discusses then findings of the regression analysis.

Because the literature on wage theft indicates that poor and minority workers are more likely to have wages stolen than others, it is logical to use a battery of regression variables associated with poverty to attempt to explain the variation in wage theft through Hamilton County. This analysis focuses strongly on those variables. Other variables should be considered for future research, including the number of businesses in a particular community, the distribution of industries in communities, and possibly information on tax burdens and regulations.

The dependent variable in the model is a normalized account of wage theft, the number of cases of wage theft per thousand workers in the municipality. The first variable included is the percentage of the population of African American descent. The literature states that minorities, particularly African Americans, are likely to suffer from labor discrimination and wage theft (Bobo, 2009; (Bernhardt et al., 2009). Including the percentage of African Americans in a municipality allows the regression model to take racial discrimination into account.

The next variable in the regression analysis is the percentage of families headed by single mothers with dependent children. This is another solid indicator of poverty status, and women are likely to be discriminated against in the workplace than men (Milkman et al., 2010).

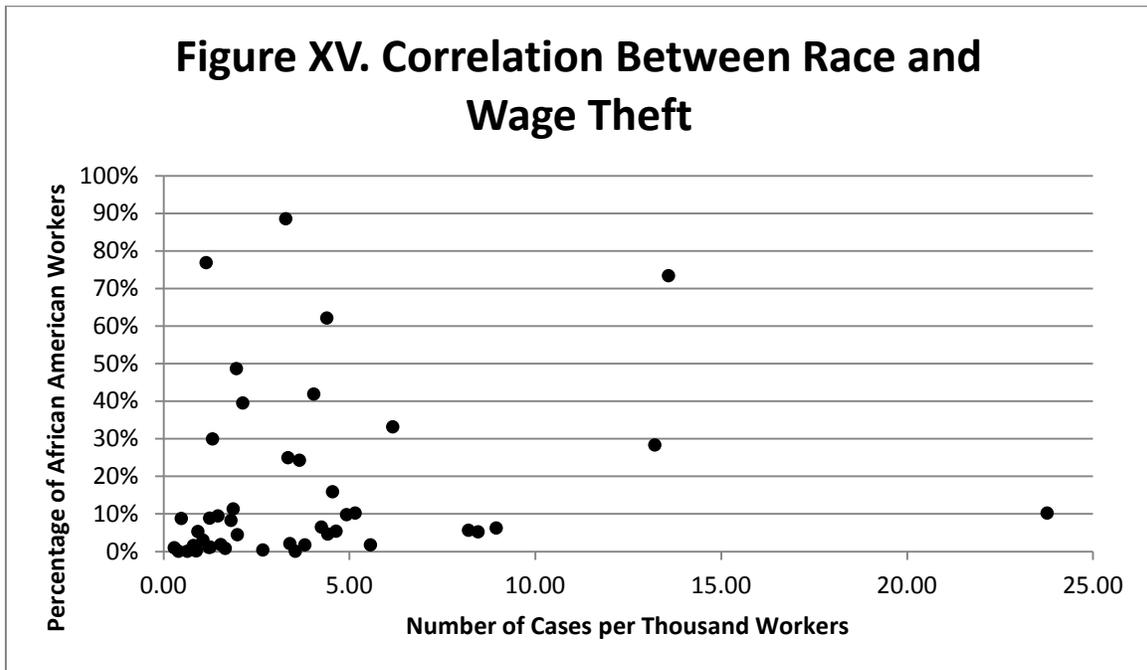
The third indicator in the model is the percentage of the population with an education less than a high school diploma. Workers with low levels of education are more likely to have poorer quality jobs and to suffer from discrimination in those jobs,

and are also less likely to know about workers' rights preventing wage theft. However, the model assumes that these workers eventually discover a remedy through applying to the DOL or its state equivalent.

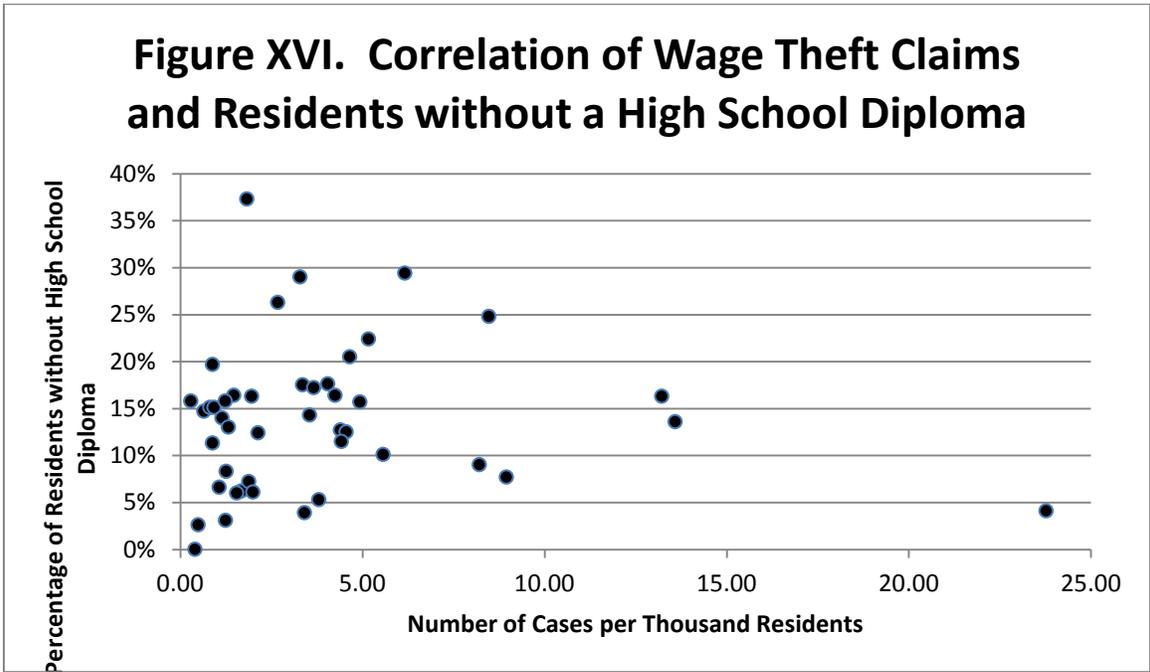
Fourth, to insure poverty was clearly represented, the percentage of residents earning under \$25,000 yearly was included. This would adequately test whether communities with high average incomes are less likely to suffer from wage theft. For similar reasons, the per capita income of each community, and the percentage of families and individuals living below the poverty level have been included as well.

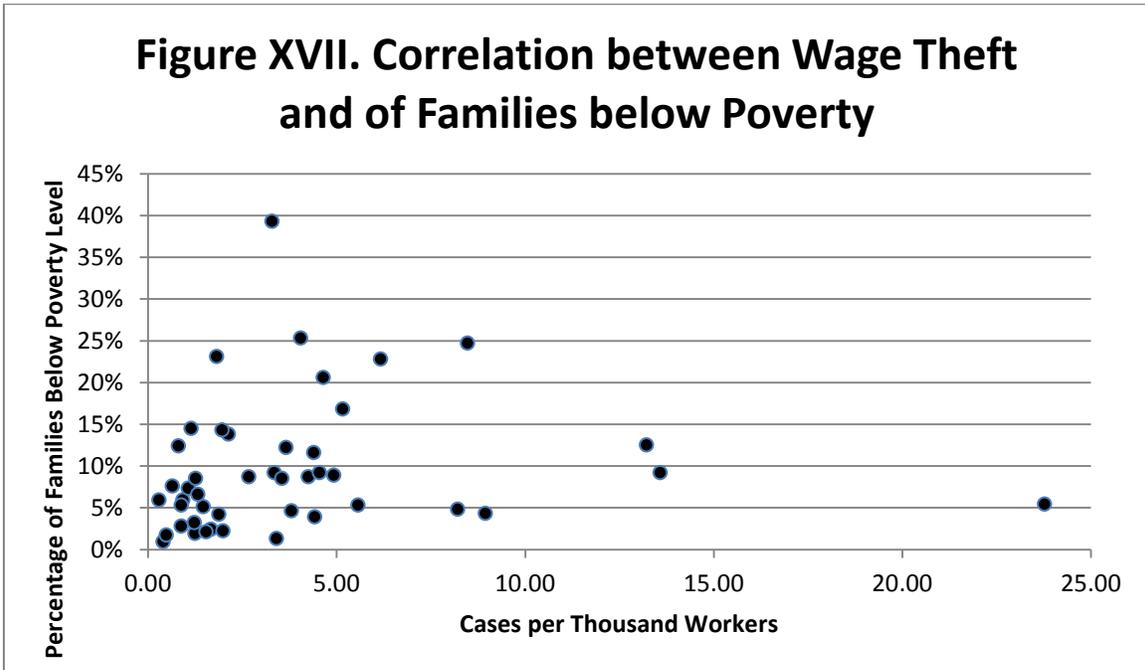
Finally, to address the physical infrastructure of individual municipalities, factors related to housing are included. Median housing value and the percentage of vacant housing units are both factors that will compensate for poverty and overall economic dysfunction (as measured by vacant housing units).

Individually, the factors vary in how much they correlate with wage theft. When race (the percentage of African-American residents in a municipality) is correlated with number of wage theft incidents per thousand workers,  $r = .03$ .



**Figure XVI. Correlation of Wage Theft Claims and Residents without a High School Diploma**





Likewise, per capita income produces an  $r$  of only  $-.04$ . Overall, correlations are relatively low (see Table X). No single factor accounts for more than 12% of variation. The closest is the percentage of individuals living below the poverty line.

<b>Table X. Correlation Coefficients <math>r</math> of Independent Variables</b>	
Independent Variable	Correlation $r$
Percent Residents Black	0.169
Percent Residents without High School Diploma	-0.017
Percent of Families Below Poverty Level	-0.006
Percent of Individuals Below Poverty Level	0.111
Percent of Female Headed Households	-0.084
Percent of Households Earning Under \$25,000	-0.041
Percent of Housing Units Vacant	0.046
Per Capita Income	0.021

Individual correlation analyses between wage theft and other factors allow distortion by outliers. A fuller analysis that takes all of the factors into account helps to provide an overall explanation. When taken together, these measures were built into a multiple regression equation of the form

$$Y = a + b_1 * X_1 + b_2 * X_2 + b_3 * X_3 + b_4 * X_4 + b_5 * X_5 + b_6 * X_6 + b_7 * X_7 + b_8 * X_8 + b_9 * X_9$$

where  $Y$  is the reported instance of wage theft per thousand workers in a jurisdiction,  $a$  is the intercept and  $b_1$  through  $b_9$  are, respectively, the variables related to poverty and discrimination: percentage of black residents; percentage of families that are female headed with children; the percentage of residents with less than a high school diploma; the percentage of individuals earning less than \$25,000 a year; the per capita income of the community; the percentage of families and individuals below the poverty line; the median house value, and the percentage of vacant houses.

The model, a backwards regression, runs a regression analysis multiple times, pruning out and removing the least effective variable each time and allowing the stronger variables to remain (Field, 2005). This model, run through SPSS, removed the variables for earning under \$25,000, percentage of residents earning less than a high school diploma, the percentage of female headed households and the percentage of black residents in each jurisdiction. The remaining five variables formed the equation

$$Y = -5.718 + .00001X_1 - 169.378X_2 + 178.525X_3 - .0005X_4 - 27.64X_5$$

For this equation,  $X_1$  is per capita income,  $X_2$  is percentage of families below the poverty line,  $X_3$  is percentage of individuals below the poverty line,  $X_4$  is median housing price, and  $X_5$  is the percentage of vacant housing units.

<b>Table XI. R Statistics</b>	
$R$	.706
$R^2$	.499
Adjusted $R^2$	.435
Standard Error	3.2418
Observations	45

The variables differ in their significance (see Table XII), but all of them except for the vacant housing unit variable are significant at the .01 level, and vacant housing units are almost (but not quite) significant at the .1 level. Though imperfect, the poverty indicators listed in Table XII are meaningful predictors of wage theft in Hamilton County.

<b>Table XII. Coefficients and Significance for Backward Model</b>			
Variable	Coefficient	t	Significance
Constant	-5.718		0.025
Per Capita Income	0.00001	1.719	0.000
Percentage of Families below Poverty	-169.378	-2.624	0.000
Percentage of Individuals below Poverty	178.525	3.276	0.000
Median House Price	-0.00058611	-1.485	0.001
Percent Vacant Houses	-27.64	-0.355	0.103

$R^2$  is the proportion of variance in the dependent variable that can be explained by the independent variables. It is an overall measure of the strength of association, but it does not reflect the extent to which any particular independent variable is associated with the dependent variable. The adjusted  $R^2$  is a modification of the  $R^2$  that penalizes the addition of extraneous predictors to the model. Thus, approximately 49.9 percent of

the variation in instances of reported wage theft in Hamilton County communities can be explained by the combination of poverty indicators chosen for this study, which is reduced to 43.5 percent when extraneous predictors are excluded. This confirms and expands upon previous literature that simply correlates poverty (identified through interviews) with wage theft; this experiment demonstrates statistically that many particular realms of poverty are connected to wage theft. The analysis also likely suffers from multicollinearity, as many of the variables correlated significantly.

Though the individual coefficients were significant, and a large portion of variation of the dependent variable can be explained by the remaining regressors, other factors may be more successful in correlating to wage theft. For instance, data on the number of businesses in a municipality, the overall percentage of income paid in local taxes, or the quantification of regulatory oversight may yield interesting results, due to their logical connection with increases in the cost of doing business, which may impel some businesses to look for other savings in labor costs (even illegally). Another important factor to consider, which is beyond the scope of this research, is the prevalence of union membership in each municipality and township: do communities with higher rates of unionization suffer from lower rates of wage theft, for example? Also of interest may be the presence and proximity of workers' centers or nonprofit law firms dedicated to helping workers recover wages. These subjects are appropriate for future research.

### *5.3 GIS Analysis and Jurisdictions*

This final section of the analysis examines the geographic aspects of the wage theft data through the creation and analysis of maps. Several caveats must be made before discussing the geographic data. GIS software aggregates data at scales that may not be optimal, or even the most meaningful. For example, high rates of wage theft may exist in one community; to ascribe characteristics of wage theft victims to all workers (or businesses) in the jurisdiction is an ecological fallacy. Or, sometimes data are divided into different types of jurisdictions that do not match perfectly, yet generalizations are drawn through data from both sets (modifiable areal unit problem). The thesis attempts to circumvent the modifiable areal unit problem and the ecological fallacy of ascribing the characteristics of the targeted businesses and people by acknowledging that the findings do not necessarily represent the entire municipality or area code under discussion. Regardless, the research and methodology are still useful because municipalities are the smallest unit where government policy can effectively change conditions and are the scale at which many important factors, including tax structure, infrastructure and social services, exist.

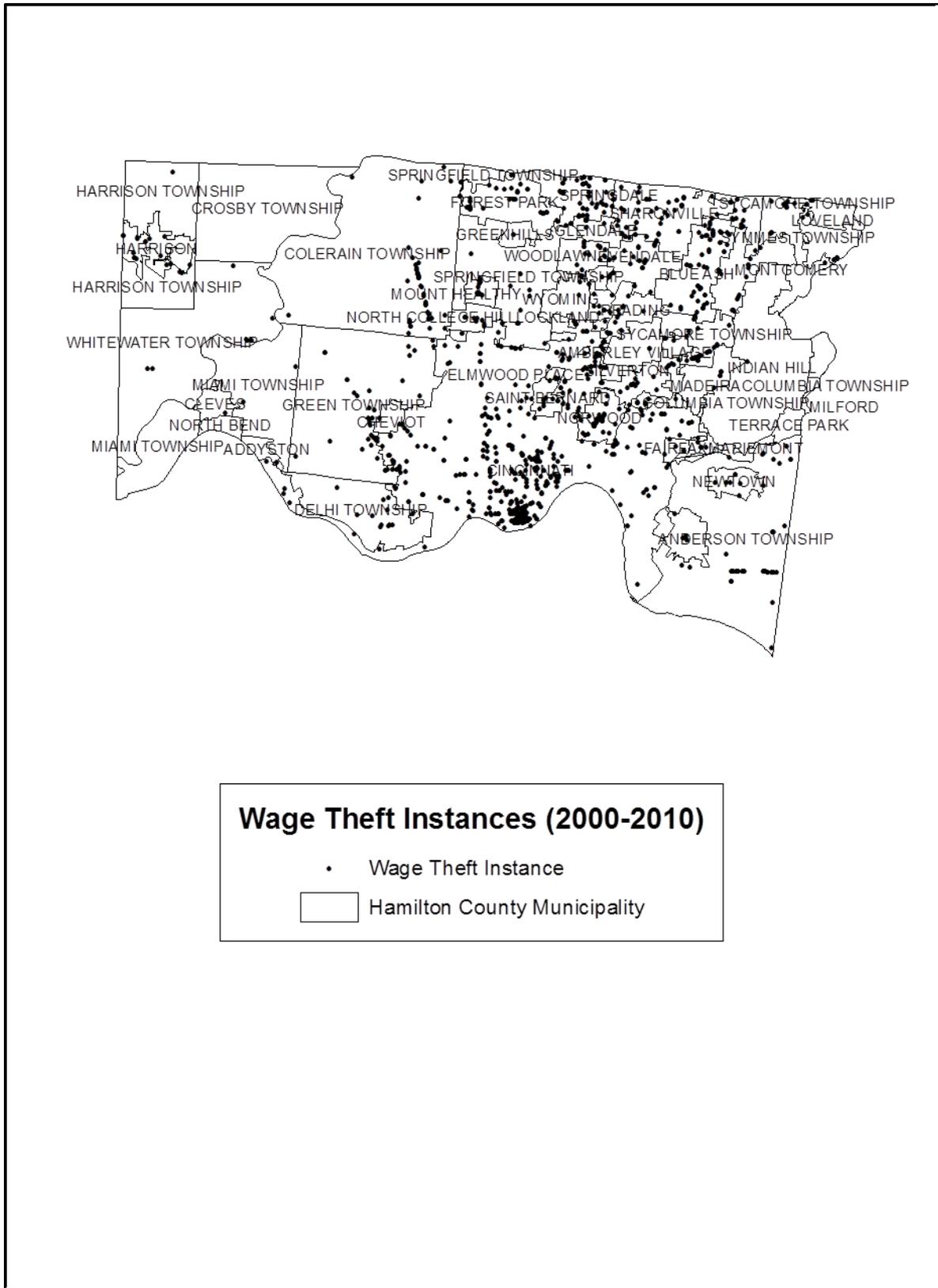
The jurisdictions of Crosby Township, Milford, Terrace Park and North Bend do not have any instances of wage theft (Milford lies almost entirely out of Hamilton County; Terrace Park has very few businesses, and North Bend is extremely small). Therefore, they are not included in this analysis.

Map 1 displays the entire data set in the county, with no distinction between state and federal data. Each dot represents a single instance of reported wage theft from 2000 to 2010. Several geographic features become readily apparent. Clustering

occurs in the downtown area of Cincinnati, probably due to its large concentration of businesses. Instances also seem to cluster around major transportation routes, including Interstates 71 and 75. Again, this is probably because businesses, which are the locus the incidents are mapped through, cluster around transportation networks to lower their costs.

While the map is useful for providing a visual overview of all the wage theft cases, its overall analytic power is limited. First, there is no control for population size or the number of workers and businesses in a community. Considering that Cincinnati is many times larger than the next larger jurisdiction in the county, it makes sense that individual instances would cluster in the more densely populated eastern jurisdictions and the river basin. Additionally, affirming that transportation routes correlate to wage theft is tautological, as businesses commit wage theft and businesses are attracted to transportation routes.

Moreover, the map does not distinguish between DOL and ODIC instances, and there is no indicator for the size of determination amounts. Finally, there is no test for statistical significance through 'eyeballing' clusters. The rest of this section analyzes the geographic data through these lenses to provide a full discussion of wage theft in Hamilton County.

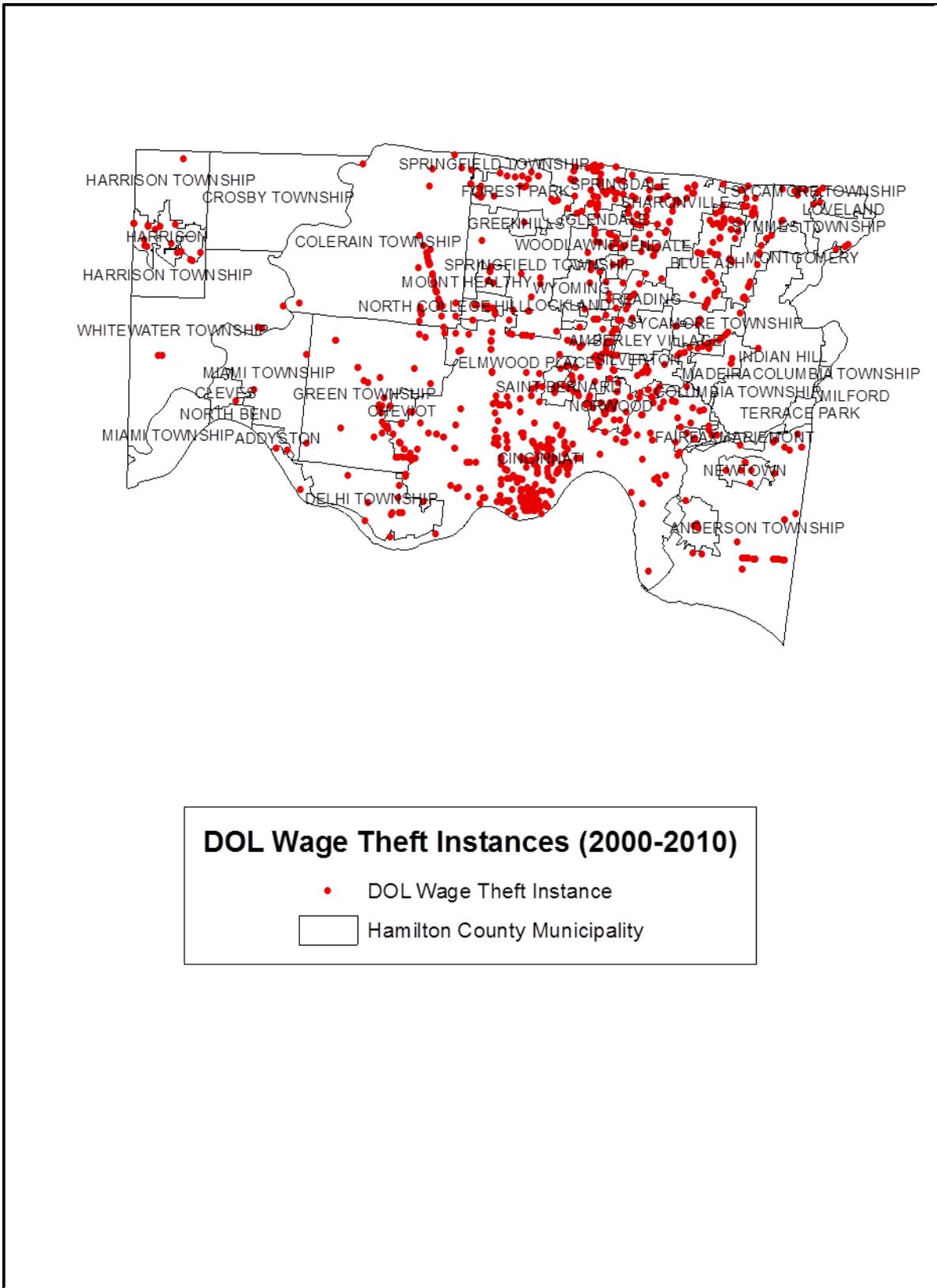


Map 1 Wage Theft Instances (2000-2010)

Map 2 illustrates only cases from the DOL data base, with the ODIC instances removed. Though the majority of instances is still visible (over 80% of the wage theft incidents were DOL cases), the transportation route trends are clarified, like spokes radiating from the hub of the central city.

The data also seem to follow the general path of urbanization in the county. The heavily urbanized river basin and northern suburbs have large concentrations of wage theft incidents, while the western, less densely populated areas of the county have fewer incidents (except for built-up areas like Harrison and Colerain Township). Again, this is logical, since these areas have more businesses and more opportunities for wage theft to occur.

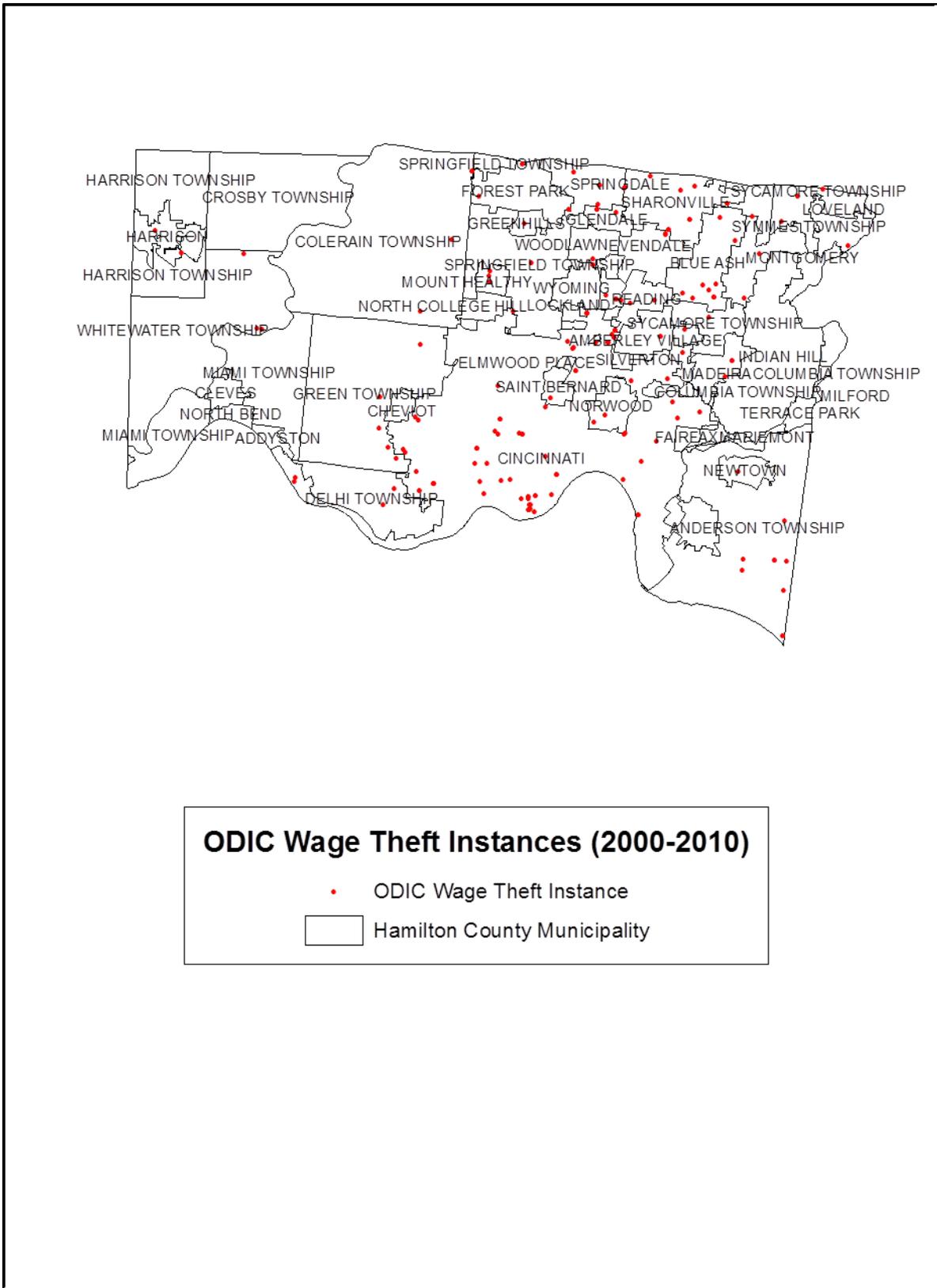
However, the map does not offer too much information. It is almost identical to the previous map, and except for the transportation routes, there is little geographic context. We see that Cincinnati has the largest raw number of incidents. Additionally, this map is uncontrolled by population.



Map 2 DOL Wage Theft Instances

Map 3 is the first one that is differentiated in a meaningful way. It visualizes the relatively small imprint the ODIC has in Hamilton County as compared to the DOL. Despite the smaller sample size, ODIC instances seem uniformly spread out around the county, following the same general pattern of the DOL data: larger concentrations in the urban core, and clusters following transportation routes north into the urbanized suburbs.

This suggests that there is little geographic difference between the dispersion of wage theft instances on the state and federal level. Thus, workers are not predisposed by geography to use the DOL or the ODIC when they turn to a public agency for reclaiming wages. Since these data suggest that geography may not be the key determinant between which workers contact the DOL or the ODIC, further research will be needed to examine that question.

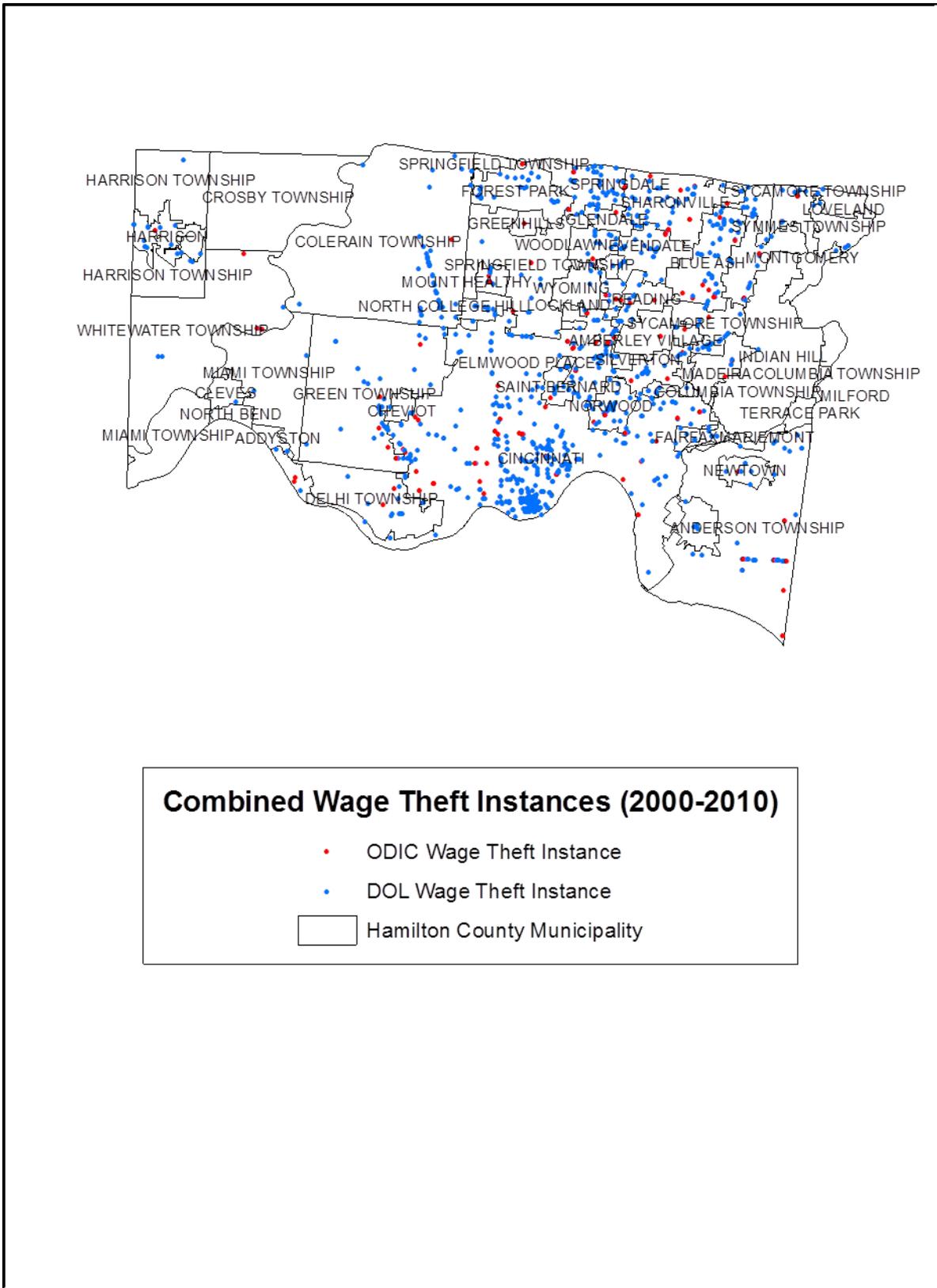


Map 3 ODIC Wage Theft Instances

Map 4 compares DOL and ODIC instances. It largely confirms that the spatial patterns of the DOL and ODIC instances do not significantly differ in their geographic distribution. Both follow transportation routes and heavily urbanized areas in the county.

There is one exception to this general trend, however. There are significantly fewer ODIC instances in the downtown area of Cincinnati than DOL cases. This may indicate that workers who turn to the ODIC are less likely to work in downtown than in other areas. We can generalize about two kinds of worker downtowns: low wage, service employment and higher wage, white collar employment. Upon analysis, the instances focus on the former: None of the ODIC instances in downtown are for determination amounts larger than \$250, and they mainly involve food service businesses.

These cases are a small sample, but they indicate that low wage workers (which make up a large portion of the overall data set) in the downtown area are more likely to turn to the DOL than the ODIC. Perhaps the DOL is more widely known among low wage workers downtown, or perhaps it is simply better known by wage theft victims of all income levels. This may indicate that for most parts of the county, geography does not determine whether workers turn to the DOL or the ODIC to resolve their individual wage theft claims.



Map 4 Total Wage Theft Instances (2000-2010)

An analysis of the size of determination amounts (the amount in dollars that the agency, either the DOL or ODIC, secured for the worker) provides further depth for the wage theft data. The categories vary by size (as seen on Map 5), with larger violations represented by larger circles on the map. Please note this map is based on determination size, not the amount of wages claimed. The smallest circles are those where no money was determined for the worker in question.

Smaller determination amounts flesh out the major clusters, with many low dollar amounts filling in the downtown Cincinnati area and following the major transportation arteries, though large determination sizes are prevalent in the downtown area. Generally, smaller determination amounts seem to follow major transportation routes, while larger instances lay on smaller roads.

Larger determination amounts are concentrated downtown and in the northern suburbs of Blue Ash, Springdale, Sharonville and Sycamore Township. Interestingly, Sharonville and Blue Ash are among the wealthier, more stable communities in the county. These data illustrates a theme the remainder of this research takes into consideration; that rates of wage theft, the size of violations, and the workers who suffer from wage theft are disproportionately represented in these northern suburbs.



The size of a jurisdiction's population must be controlled to discover the jurisdictions where theft is a significant problem (relative to the rest of the county). This analysis uses two methods to control for the size of population for a jurisdiction: the first is the number of workers in a jurisdiction, which serves as both a proxy for the overall size of the workforce and as an indicator of the raw size of business and economic activity within a jurisdiction. However, just because someone lives inside a jurisdiction does not necessarily mean that he/she works in that jurisdiction. The determination of commuting patterns and calculating the number of workers in a jurisdiction who live within that jurisdiction is beyond the scope of this research. The research assumes that the number of workers in a jurisdiction is a rough proxy for its size and economic activity; regardless, the research is not dependent on this environmental fallacy. It uses it only as a control for size.

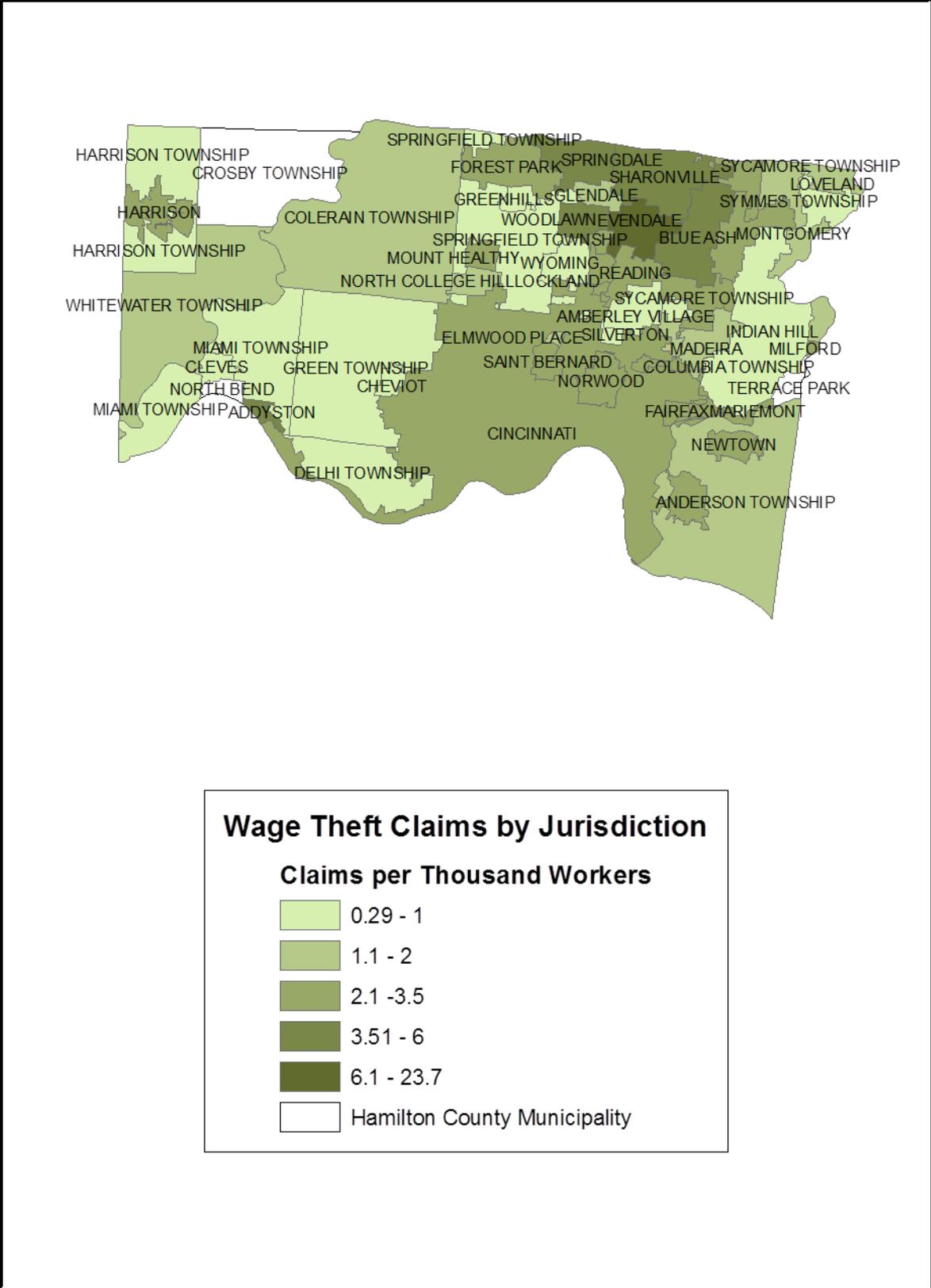
The second method uses the total size of the population as a control for the number of wage theft incidents in a jurisdiction. The rationale is identical to the number of workers in a jurisdiction and is intended to provide a comparison for the above method.

Map 6 is a choropleth illustrating the number of wage theft claims in a jurisdiction per one thousand workers. (Crosby Township, North Bend and Terrace Park have no wage theft incidents and are white). Communities with rates above 3.5 per thousand workers are above the mean for Hamilton County and are considered to have problematic rates of wage theft.

Despite the control for population, sparsely populated areas still have low levels of wage theft; however, this likely happens because these communities have small

numbers of businesses and thus fewer opportunities for wage theft to occur. Indian Hill, for example, has very few businesses, and only one incident of wage theft.

Cincinnati, the central city, with the largest number and range of businesses (large and small) is above mean (3.8). The large concentration of wage theft in the northern suburbs, particularly Springdale, Sharonville, Sycamore Township, Blue Ash, Woodlawn, and Evendale, is surprising. These jurisdictions all have rates of wage theft per thousand workers significantly higher than the median (specific tests for significance follow below). This is surprising, given that these communities are whiter, have higher incomes and generally suffer from poverty less than, for example, Cincinnati. However, these areas also have many businesses, large and small, and are heavily urbanized. Future research should be conducted to determine what factors contribute to the high levels of wage theft in these communities. One potential explanation may be if these businesses concentrate in retail, an industry which suffers from high rates of wage theft (Bobo, 2009).

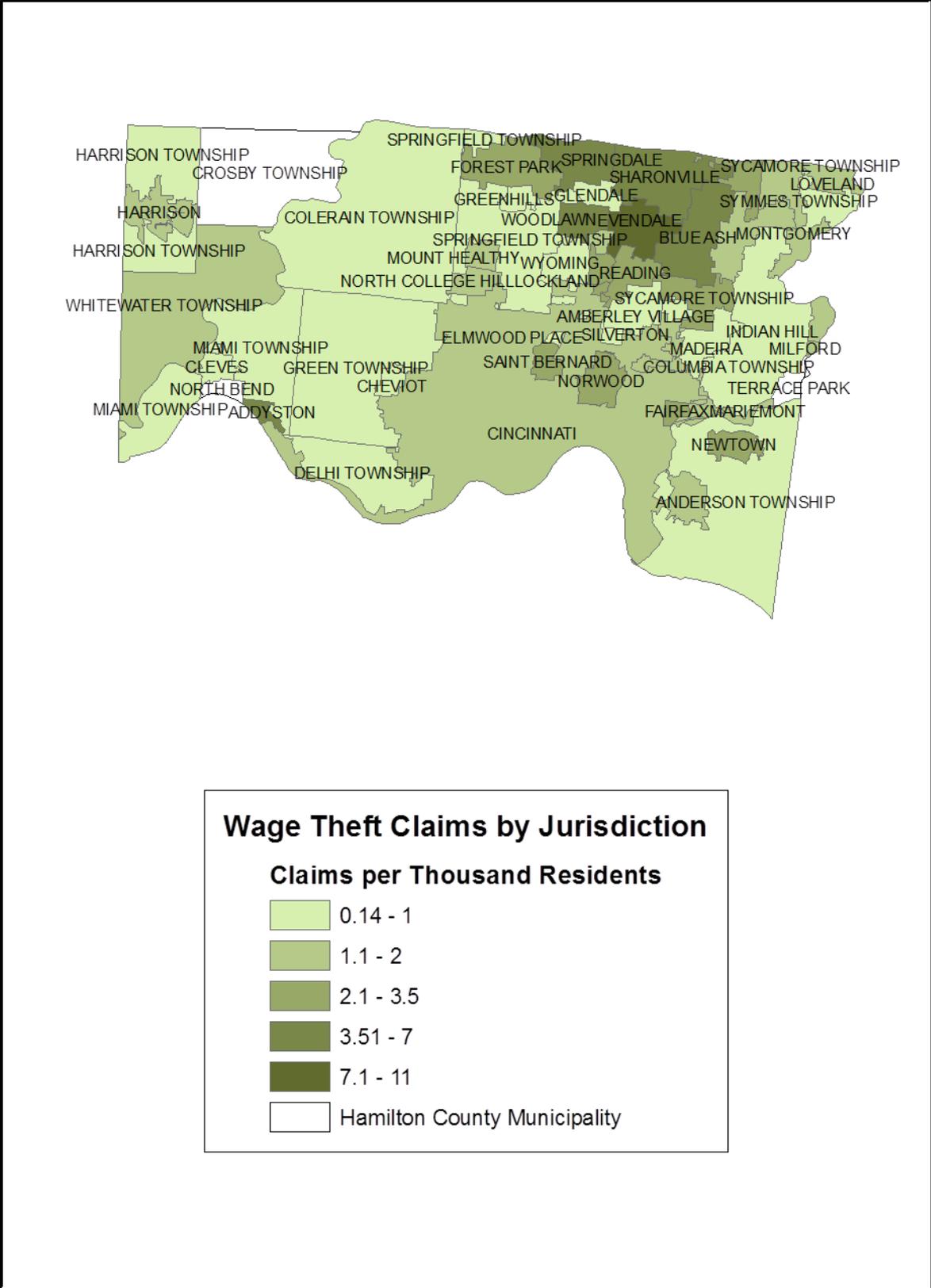


Map 6 Wage Theft Claims per Thousand Workers by Jurisdiction

The number of workers in a jurisdiction shows a similar trend to total population. In this case, jurisdictions with rates above two instances of wage theft per thousand residents are above the mean for Hamilton County. Map 7, which illustrates the number of wage theft incidents per one thousand residents, portrays the same general patterns and clusters of wage theft incidents. Cincinnati is above the mean, but not significantly so. Areas with smaller populations have lower rates, and the urbanized northern suburbs suffer from very high rates of wage theft (though in this case, Evendale is an outlier far above the others).

Using residents instead of workers dilutes the effect of smaller numbers of wage theft, as nearly all jurisdictions have many more residents than participants in the labor market; many communities by this measure seem to have small rates (for example, Colerain Township and Springfield Township have relatively high numbers of wage theft rates, but large populations that effectively dilute those instances). Because of this dilution, this research project suggests that measuring instances of wage theft through controlling with workers is more effective than a control through residents, though overall the difference is slight and the results approximate each other well, offering validity to the research project's methodology.

Because the northern suburbs seem to exist as a cluster of wage theft incidents, high even when controlled for population, a targeted test of the statistical significance of this area is warranted. The analysis section concludes with an investigation of hotspots of wage theft in the northern suburbs.



Map 7 Wage Theft Claims per Thousand Residents by Jurisdiction

### 5.3.1 Geospatial Statistical Analysis of Jurisdictions

This section uses geospatial statistics, principally hotspot analysis, to discover clusters of wage theft-committing businesses in Hamilton County. The statistic calculates z-scores and resultant *p*-scores after seeking out jurisdictions where levels of wage theft (in this case, the number of wage theft incidents per thousand workers) in neighboring jurisdictions are statistically dissimilar (Getis and Ord, 1992). The procedure cordons off the area where the statistically significant difference in wage theft ends. Thus, the tool highlights regions where levels of wage theft are statistically different from neighboring jurisdictions at the 90 percent, 95 percent and 99 percent confidence level. For this research, the contiguous polygon option was chosen (ESRI, 2011).

The process revealed two important findings regarding wage theft in the county (see Map 8). The analysis reveals a hotspot of wage theft in the northern suburbs, centered on Evendale, Blue Ash, Sharonville and Glendale<sup>3</sup>. These communities have wage theft incidents far higher than their neighboring jurisdictions, significant at the .01 level. Furthermore, these higher instances of wage theft are suggested to be influenced based on proximity – e.g., the high values in Blue Ash are somehow influencing, and influenced by, the high values in Evendale and Sharonville. More so, the high values in Blue Ash are significantly different from the numbers of wage theft in Sycamore Township and Montgomery. Woodlawn, Lockland and Reading have rates higher than their neighbors significant at the .05 level, and the same spatial influence of these rates, as demonstrated by the example of Blue Ash above, can be made for these

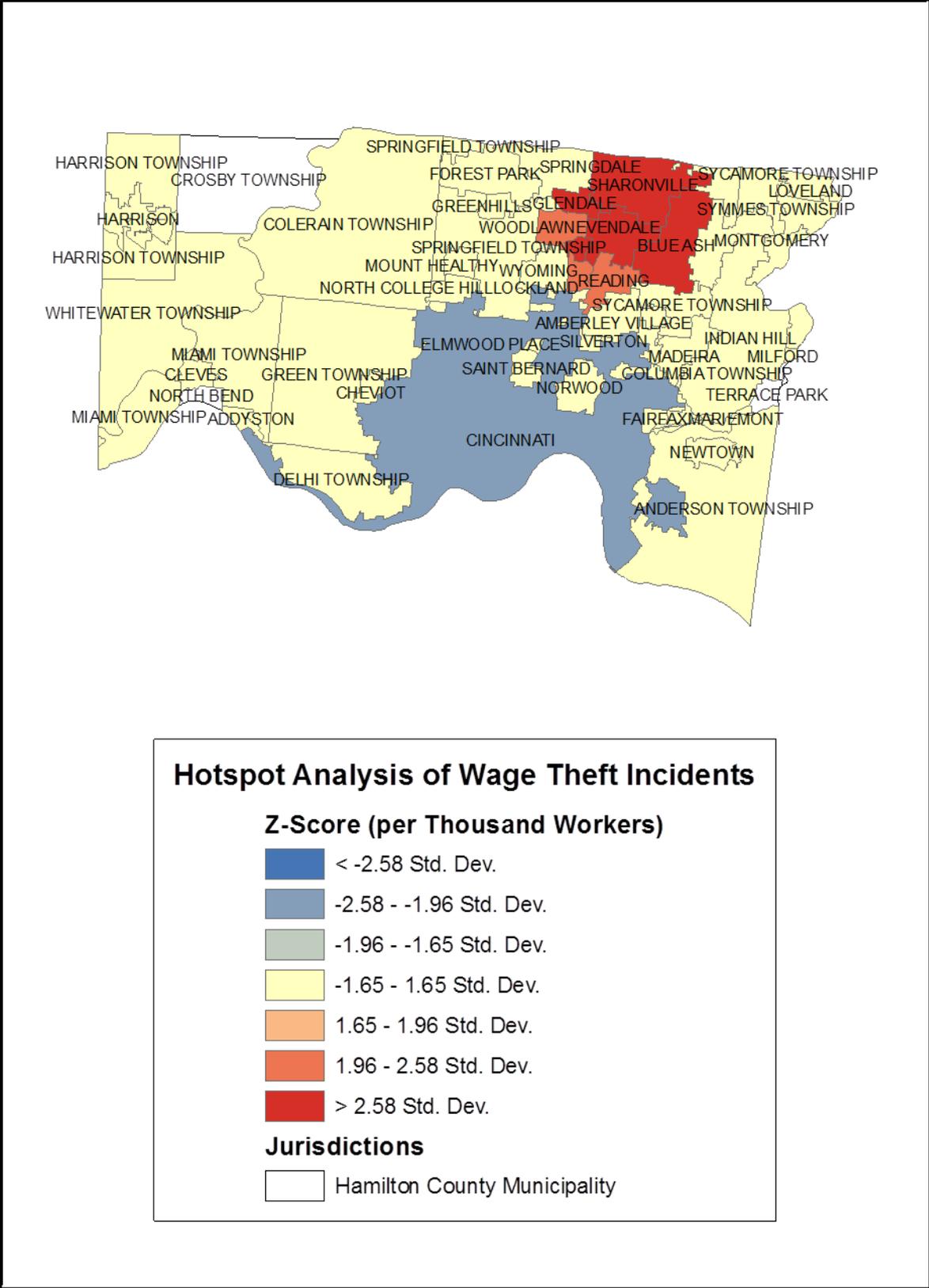
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<sup>3</sup> Crosby Township, North Bend and Terrace Park are not included in the analysis, as they have no cases of wage theft. Thus, they are green, which is not included within the hotspot analysis legend.

communities. Thus, the hotspot analysis indicates that these communities together share rates of wage theft higher than their neighbors by a large margin (even when controlled by population). This corroborates and validates previous analysis centering on these jurisdictions as clusters of wage theft.

Cincinnati is marked by the analysis as a 'cold spot', or an area where rates of wage theft are significantly lower than neighboring jurisdictions. Thus, Cincinnati's rate of wage theft per thousand workers is smaller than its contiguous neighbors, including Delhi Township, Green Township, Anderson Township, Norwood, Saint Bernard, and Elmwood Place. This is not to say wage theft is not a significant problem in Cincinnati (a plurality of cases occur there, and when controlled by size it is above the county's mean). It instead indicates that Cincinnati has lower rates than its neighbors would indicate.

The most important finding of this analysis is the identification of the hotspot in the northern suburbs. These communities jointly suffer from rates of wage theft higher than their neighbors (and higher than the county average). This claim is further strengthened by a hotspot analysis of the home ZIP codes of workers who have suffered from wage theft.



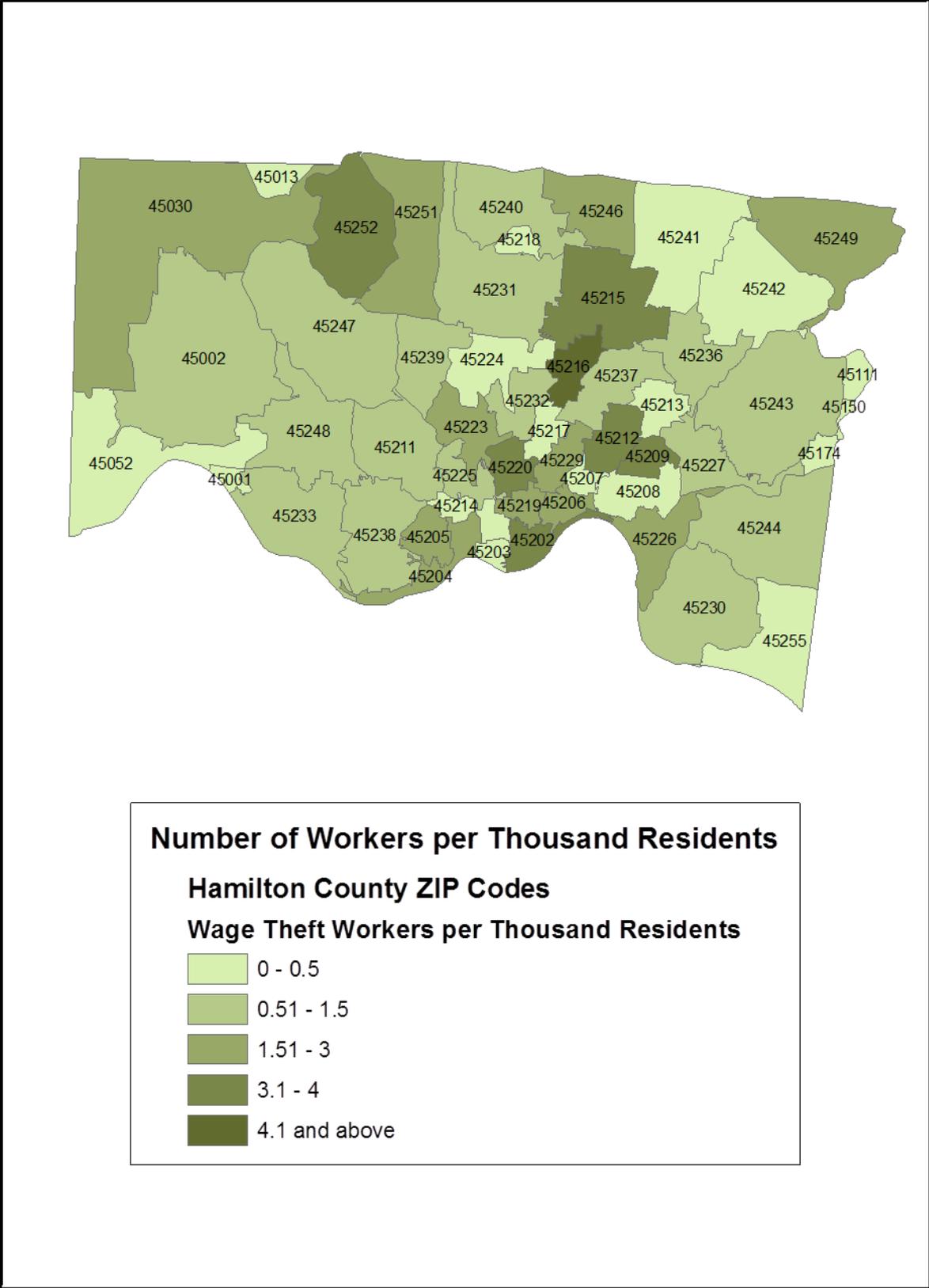
Map 8 Hotspot Analysis of Wage Theft Incidents

#### *5.4 GIS Analysis of Workers*

Data from the ODIC included a spatial characteristic unavailable in the DOL data: the home ZIP code of the worker filing the complaint. These data allow for a spatial analysis of the distribution of these workers, and for generalizations about the ZIP codes and municipalities they live in. The analysis reveals communities suffering from higher than average rates of wage theft.

The following map, Map 9, illustrates the number of workers (155 in total) filing ODIC complaints living within each ZIP code, per thousand residents of that ZIP code. Some of the results are unsurprising. For example, ZIP codes in high poverty areas, including 45202 (downtown and Over-the-Rhine), 45220 (Coryville-University Heights-Fairview and Clifton), 45212 (Norwood), follow the narrative of poor and minority workers suffering the greatest from wage theft. This provides support for some of the main findings of the literature.

However, some of the map's findings are surprising. High rates in 45216 (Elmwood Place, Arlington Heights), 45215 (Reading, Wyoming, Lincoln Heights) follow the trend discussed above, with wage theft prevalent in the northern suburbs. These areas are poor as well (except for Wyoming), but are far beyond the inner city tracts of poverty that usually make up wage theft victims (Bernhardt et al., 2009). That more wage theft victims live in these outer suburbs, rather than the inner city, raises interesting questions about the agglomeration of wage theft victims and their distribution.



Map 9 Number of Workers per Thousand Residents

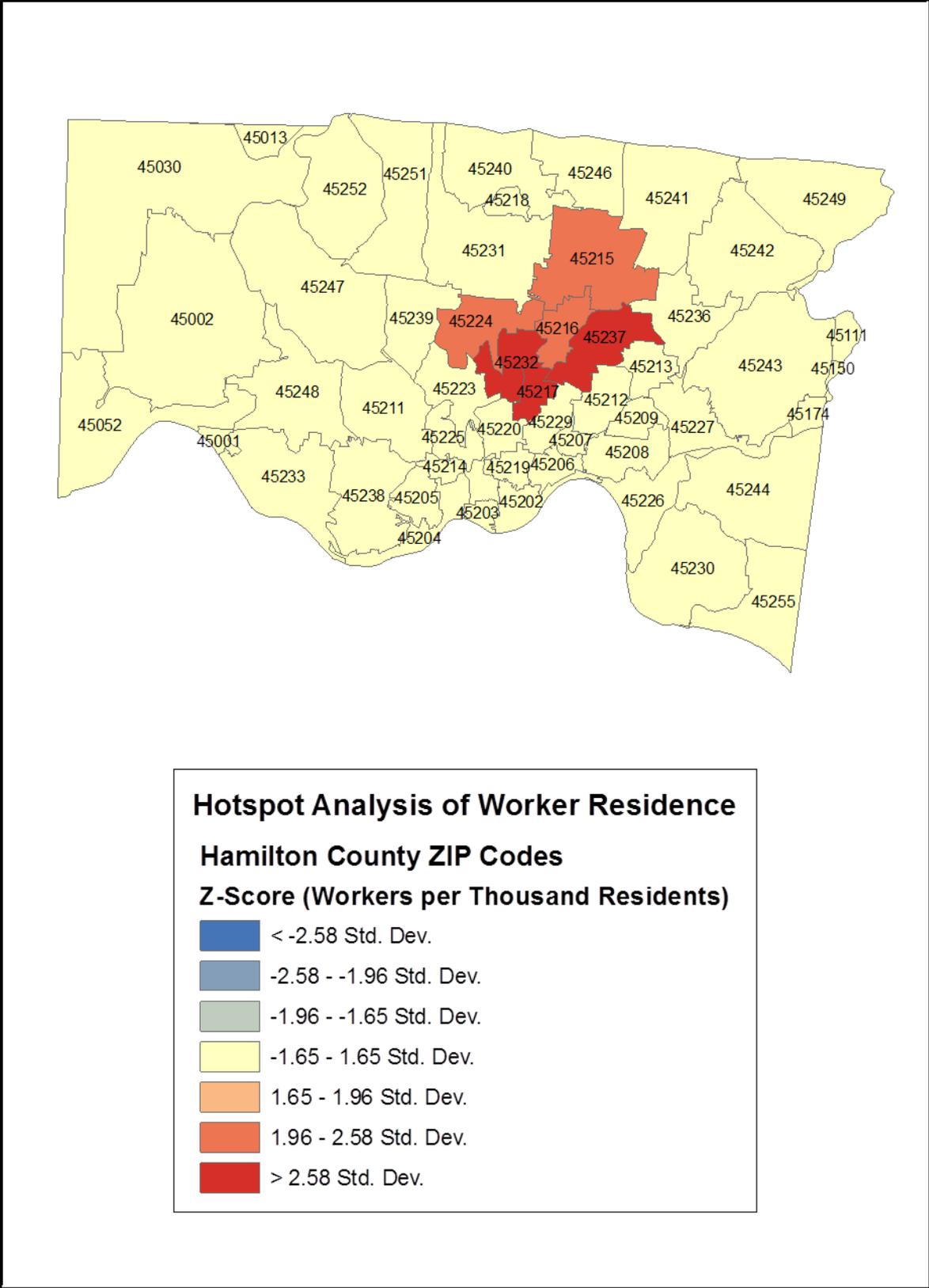
#### 5.4.1 Geospatial Statistical Analysis of Workers

The research now uses geospatial statistical analysis to identify and discuss clusters of workers affected by wage theft in Hamilton County. Hotspot analysis is employed once again, as it assigns z-scores and *p*-values to ZIP codes in this case and conducts tests of statistical significance to determine where significant agglomerations of workers suffering from wage theft exist in clusters of jurisdictions. The data come from ODIC cases, which included the ZIP code of the worker in each instance (the DOL data did not include such information).

Interestingly, the data once again point to unusually high rates in the area north of Cincinnati (see Map 10). The colored ZIP codes possess numbers of workers (controlled by total number of workers) who have suffered from wage theft at rates statistically higher than their neighboring communities, creating an island or hotspot. The following table shows the corresponding jurisdiction to each of the ZIP codes found to have statistical significance:

<b>Table XIII. Jurisdictions of ZIP Codes with Statistical Significance</b>	
Jurisdiction	ZIP Code
Wyoming, Reading, Lincoln Heights, Woodlawn	45215
Cincinnati	45216
Saint Bernard	45217
North College Hill	45224
Cincinnati	45232
Golf Manor	45237

Some poor neighborhoods in Cincinnati are included, but the ZIP codes include many northern jurisdictions that were implicated in previous analysis, including Golf Manor and Woodlawn. These neighborhoods and jurisdictions are generally low- to moderate-



Map 10 Hotspot Analysis of Worker Residence

income communities, meaning that for ODIC workers, poverty may still play a key role in determining where workers live.

The data detailing the ZIP codes of workers suffering from wage theft offers special advantages and disadvantages. It eliminates the problem of ascribing the social characteristics of wage theft incidents to jurisdictions when a business commits wage theft, because people who work in a jurisdiction do not necessarily live in that jurisdiction. It also allows a snapshot of the areas where workers who suffer from wage theft live. These data, like the above description of worker ZIP codes, do not suffer from the environmental fallacy, because the workers who suffer from wage theft actually live in these ZIP codes (as opposed to merely having businesses within them). This means that the jurisdictions with these ZIP codes suffer from abnormally high, related rates of wage theft, and are able to offer services to workers.

However, the overall data sample is small (155 workers, and limited to ODIC instances). Additionally, the data create another environmental fallacy. Just because a relatively small number of people who live in a certain ZIP code have suffered from wage theft, does not necessarily mean they share characteristics with the majority of people who live in that ZIP code. Indeed, with the small size of the ODIC data set, relatively few instances can significantly change the overall rate for a single ZIP code. Thus, the data should be taken with some caution. Regardless, careful analysis reveals that certain jurisdictions, particularly the area north of Cincinnati, suffer from statistically significant rates of wage theft above the county median within a meaningful and differentiated cluster. Additionally, many workers who suffer from wage theft live in and near that area.

## **6. Conclusions**

The thesis now reviews its major findings, both methodological and empirical, and discusses possible policy prescriptions jurisdictions and the county could take to begin dealing with the wage theft problem

The work has established novel methods for identifying, organizing, theorizing and analyzing wage theft. The collection of large amounts of data from the DOL and the ODIC has not been used in economic studies of wage compliance or in sociological and geographical studies of wage theft. This new method of data collection allows scholars, concerned citizens, labor unions, trade groups and nonprofits to collect basic data on wage theft in their communities.

The statistical analysis and the construction of regression models to analyze the data are also novel, if slightly determined. They are useful for identifying factors correlating to wage theft, but more research is needed to establish the most significant factors relating to wage theft.

The establishment of a GIS for the analysis of wage theft data is novel as well, and fits with both empirical, positivist attempts at knowledge production and the integration of GIS into critical aspects of geography and planning (Cope and Elwood, 2009). GIS handles the large database of wage theft instances well, and enables the use of geospatial statistics and analysis. Further research to develop the software and increase its sophistication is warranted.

The project has also contested the research questions that provoked it. It has firmly established that wage theft is a problem in Hamilton County, impacting hundreds annually. It has documented the procedures and results of the two major agencies that

contend with wage theft, the DOL and the ODIC. The regression analysis, as discussed below, reveals some significant factors associated with wage theft in the county, though further research is needed. Finally, through documenting results from other states and municipalities, the project concludes by recommending some policies for the county.

The research has shed significant light on the state of wage theft in Hamilton County, and has created a thread of research for wage theft and related factors in medium sized cities in the United States. The project has computed a baseline level of wage theft for a given time period, enabling comparison with other jurisdictions and metropolitan areas and stratification into smaller time periods. Interested parties can now determine the size and scope of wage theft in the jurisdictions of the county by year, and can see the individual businesses that engage in wage theft, as well as the kinds of wages wage thieved workers earn, the effectiveness of the DOL and the ODIC in returning stolen wages, and descriptive statistical information on stolen wages, broken down by agency.

Statistical and geographical analysis demonstrates that, though wage theft is a problem in almost every jurisdiction in the county, a hotspot of wage theft exists in the northern suburbs, centered on Evendale and extending into Blue Ash, Woodlawn, Springdale and surrounding jurisdictions. These areas have high rates of wage theft when controlled by population. They exist as a separate island of intensity in both wage theft and the number of workers suffering from wage theft and living in the vicinity. Such intense rates of wage theft could potentially have negative effects on future business location prospects. These issues should be recognized by the region of jurisdictions affected. Jurisdictions also loose income tax revenue

Though reported rates of wage theft have been decreasing slightly over the years, this does not necessarily mean that wage theft is not a problem in the county. (Indeed, rates have recently begun to rise). The adverse state of the economy since 2007 may also have some effect, as workers could be less willing to report wage theft in a time of low employment (recall that the ODIC data revealed that almost every worker stopped working at the thieving firm after reporting an incident). Additionally, many instances of wage theft may go unreported, due to the social coercion.

This may explain why wage theft rates are high in the northern suburbs. Potentially, poorer or African American workers may be less likely to report incidents of wage theft; while white, middle class workers with more social power and more to lose may be more confident in reporting wage theft incidents. This hypothesis would have to be tested by comparing mean determination amounts in different jurisdictions, but it would be difficult to establish the particular position of individual workers, and thus harder to generalize about their general income level or class status.

The research project has also shown that poverty, though a significant factor in identifying wage theft, does not explain the whole story. Though some indicators of poverty have proved useful in identifying the variance associated with reported rates of wage theft, others were not as useful, or redundant. The section below on future research discusses potential factors that may be more fruitful.

## *6.1 Policy Recommendations*

### *6.1.1 Collection of Data from ODIC and DOL*

Jurisdictions, metropolitan authorities, regional governance associations and other organizations can easily replicate the data collection and analytical methodologies described in this research to calculate descriptive statistical reports of wage theft in their communities. These data can be compared to Hamilton County, or to the large metropolitan studies of New York City, Chicago and Los Angeles (Bernhardt et al., 2009). Establishing task forces or committees to gather and publicize this data will grant the public a much clearer view of wage theft in their local area, continue to fill a crucial gap in the research literature, and allow more general conclusions to be drawn on the national scale of wage theft.

### *6.1.2 Increase Resources for Federal, State and Local agencies*

Though the DOL has recovered wages for many workers, they leave much to be desired (Government Accountability Office, 2009a, 2009b, 2009c). Expanding resources and reforming the overall methods of enforcement, as discussed in the literature review, would be positive steps in insuring that workers keep their pay.

The establishment of programs at the local scale could provide targeted means for jurisdictions to limit wage theft in their neighborhoods. Municipalities that suffer from particularly high rates, including Blue Ash, Evendale and Springdale, could work with the county to establish and publicize a task force of mediators who specialize in dispute resolution and minimum wage, back wage and overtime issues. By cooperating with violating businesses, such groups could secure back wages without risking capital flight. By sharing costs, the county and the communities could work to provide legal relief to

workers who may not be able to afford private attorneys, but have cases too complicated for the DOL or ODIC to handle. Though this effort may increase costs, attorney and court fees could be paid from guilty businesses.

### *6.1.3 Establish a County-wide Clearinghouse and Black List*

The names and addresses of businesses that engage in wage theft are public information, but community groups, labor unions and nonprofit organizations have not attempted to gain access to this information. A county-wide clearinghouse, where jurisdictions, unions and concerned citizens could access and share such information would enable grass roots campaigns to boycott, shame and correct businesses that insist on harming communities by stealing wages from community members.

### *6.1.4 Establish Regional Conversation and Coordination*

Bringing this information to light could also enable a county-wide, or metropolitan area-wide, discussion on wage theft and businesses' compliance with labor law. With participation from workers, unions, businesses, trade organizations and government officials, cooperative methods to remediate stolen wages and constructive ideas on how to prevent wage theft in the future could be established. Communities with particularly high rates, including the city of Cincinnati and the northern suburbs, would have special investments in the outcomes of such discussions.

Regional conversations could also facilitate the political process and push elected officials to adopt ordinances modeled off of those discussed in the literature review above. It could also persuade members of the public to vote for referenda to adopt laws of this kind.

### *6.1.5 Adopt Local Ordinances for Punitive Fees*

As discussed above, jurisdictions have the ability to pass laws that severely punish wage theft. To make business stop engaging in the practice, in economic terms, the price must be too high. Adopting a triple damages law like in Massachusetts would force companies to reconsider stealing a week's worth of overtime, when that could easily translate into three weeks' worth of overtime, plus court costs and attorney's fees.

This could potentially have the effect of limiting business investment at the local scale, as businesses become leery of the large expense occurred for wage theft violations (which are depressingly common, as the data demonstrate). Because of the risk of capital flight, the jurisdiction that the law is enacted at must be maximized. A national wage theft law that builds on current minimum wage law but furthers it by providing higher damages and an end to statutes of limitations would be optimal, while laws at the state level may reinforce existing trends of capital flight. Municipal ordinances may have different effects on different industries, depending on the range from which they draw customers, competition from other businesses, et cetera.

### *6.2 Future Research*

Future research should focus on broadening the geographic and industrial analysis of wage theft. An important thread of research would compare rates across metropolitan areas (or in Hamilton County's case, expand the analysis to the entire, fourteen county area). Comparisons with other large Midwestern cities with significant business interests, including Indianapolis, Cleveland, and Dayton, could provide interesting information and experimental validity.

Also important is further experimentation with factors that correlate with wage theft besides poverty. Potential factors include the percentage of unionized workers in a jurisdiction; the number and types of businesses in a jurisdiction; proximity to state and local agencies; education levels besides high school diplomas; marginal local tax rates for jurisdictions; quantifications of the regulatory hurdles businesses face when incorporating or operating; and levels of training in the workforce, as well as numbers of undocumented immigrants in individual jurisdictions.

These factors probably better explain the costs of doing business in particular jurisdictions, providing better explanatory power for why businesses would then engage in wage theft. The opposite is true for the percentage of unionized workers. The higher this number, the more likely it is that unions can limit wage theft through union-provided attorneys or public pressure.

In the current economy, where stable employment that provides benefits and health insurance is difficult to find, businesses have a moral and legal obligation to pay their workers their wages. They also have an economic obligation, as wealthier workers are better able to afford products and to drive the consumption upon which the US economy depends. Community groups and labor unions are in a unique position to identify businesses that engage in this behavior and to highlight it, for the benefit communities and businesses that play by the rules and abide by minimum wage laws. Though wage theft is a significant problem, the identification of its scope and perpetrators is the first step in countering it.

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## Appendix A

Attention: FOIA Request

Per Jansen  
3040 Observatory Avenue  
Cincinnati, Ohio 45208

FOIA Coordinator  
U. S. Department of Labor - ESA  
Room S-3201  
200 Constitution Avenue, N.W.  
Washington, D.C. 20210-0002

September 22, 2010

Dear Department of Labor FOIA Coordinator:

I am a graduate student at the University of Cincinnati in Cincinnati, Ohio. My thesis focuses on wage theft in Hamilton County, Ohio, specifically on minimum wage, unpaid wages, and overtime violations of the Fair Labor Standards Act. The online Department of Labor website tracking violations is useful; however, my work concerns long term trends and therefore I need violations data going back before 2009 (the current limit of the website).

I am requesting records for all claimed and proven minimum wage and overtime violations under the Fair Labor Standards Act with businesses and individuals within Hamilton County, Ohio from the year 2000 to the year 2010, from the Wage and Hour Division of the Department of Labor. I would prefer the data, if possible, in spreadsheet form, preferably Excel, with the following categories:

- Name of the violating business
- Industry of the violating business
- Street address of the violating business
- City of violating business
- ZIP code of violating business
- Current status
- Date complaint received
- Date complaint finished
- Whether the complaint was resolved (yes/no)

Determination amount  
Whether amount was paid in full (yes/no)  
Reason for filing (unpaid wages, minimum wage violation, overtime violation)  
Hourly wage rate for complainant  
Whether complainant earns tips (yes/no)  
If the amount of the complaint was worth at least \$30 (yes/no)  
The dollar amount of wages claimed  
Whether deductions were withheld  
Approval area (accepted/unaccepted)

Please let me know via email how much of this information it is possible to send. Also, I would greatly appreciate if I could have this data by October 18, 2010. Thank you in advance for completing my request.

Sincerely,

Per Jansen  
3040 Observatory Avenue  
Cincinnati, Ohio 45208  
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