Worker Misclassification and Wage Theft in the Construction Industry in Kansas

Michael P. Kelsay

Adjunct Professor, Department of Economics

University of Missouri – Kansas City

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The Mid-American Regional Council is one of the largest regional labor unions in the country with a membership of more than 52,000 working men and women across Illinois, Missouri, Kansas, and Eastern Iowa.

The Mid-America Carpenters Regional Council provides a foundation of skill-advancement training as a constant source of personal enrichment and career progression while improving the lives of its skilled members and their families.

Executive Summary

This report is a further step in analyzing the economic implications of employee misclassification and wage theft for both the public and private sector in the State of Kansas. the construction industry has provided a pathway for non-college educated workers to develop employable skills and secure well-paying middle-class jobs that have served as a backbone for communities around the United States. The construction industry has promulgated labor practices that provide very good wages and benefits, worker education and training programs, and joint-labor-management cooperation. However certain sectors of the construction industry illustrate some of the worst labor practices in the country: meager and low paying wages, no benefits, unsafe working conditions, wage theft and payroll fraud.

The driving force in these illegal labor practices in the construction industry has been driven by the pursuit on the part of unscrupulous employers of dramatically decreasing labor costs. As a result of these unscrupulous practices, it has made it practically impossible for law-abiding contractors to effectively compete with these unscrupulous firms who have a significant cost advantage because of this illegal activity. The foundation of employment law is the right to be paid for the work we do in a timely fashion, to have our health and safety protected on the job, and to be eligible for social safety net programs such as workers' compensation, Social Security, and unemployment insurance.

Across the State of Kansas far too many employers are not playing by the rules, denying workers these basic rights. This is primarily the result of employers illegally misclassifying their workers as independent contractors. This allows them to save approximately one-third of their labor costs by not paying their taxes, not paying into Social Security and unemployment insurance, and not paying legally required workers' compensation insurance coverage. While this results in higher profits for these employers, these actions have real consequences: these workers—now considered independent contractors—are denied their legal rights as employees and are left without the most fundamental protections on the job. In far too many instances, these independent contractors are also the victims of wage theft. Sometimes workers are paid late. Sometimes workers are only paid for a fraction of their hours worked. And sometimes, workers are not paid at all. Wage theft puts workers and their families in the untenable position of being unable to pay rent on time, buy groceries, or afford childcare. With many affected workers already struggling to

make ends meet, wage theft can push families' already precarious financial situations over the edge. While workers bear the primary burden of misclassification and wage theft, the ramifications of these illegal labor practices ripple throughout Kansas society. Employers who misclassify and refuse to pay their workers are able to lower their labor costs, thereby making it much harder for legitimate employers who play by the rules to compete, and Kansas taxpayers are often left holding the bill. They must cover revenue shortfalls because these employers evade required taxes and associated costs. Worker misclassification and wage theft in Kansas means taxpayers must pay increased social insurance expenses to support the victims of misclassification and wage theft. In sum, these employers are cheating workers, cheating legitimate employers who play by the rules, and cheating taxpayers in Kansas.

One of the most dominant results of these illegal practices is payroll fraud. Payroll fraud is the result of two important factors: (1) misclassifying employees as independent contractors and (2) paying workers "off-the-books" in cash-only arrangements. Employers utilize these practices to evade legal responsibilities of paying overtime rates and making the required contributions to social insurance programs. A direct result of these practices by unscrupulous employers is that they inflict substantial harm on workers who do not receive required overtime pay and are denied their legal rights to unemployment insurance, Social Security, and Medicare benefits. In addition, other sectors of the economy are harmed. Payroll fraud defunds the social programs which results in increased unemployment insurance and workers compensation tax rates on those businesses that play by the rules; it also increases the drain on other income supporting programs which the public sector in the state has to pay.

A direct method that has been used extensively to directly measure the incidence and cost of worker misclassification are state-level unemployment (UI) audits in the construction sector. However, there are several disadvantages to this method. First, and most importantly, this direct method of measuring misclassification required the cooperation of State Departments of Labor. The documents received by the State of Kansas do not provide sufficient documentation to conduct a meaningful analysis of misclassification and wage theft in Kansas. The review of state audits that review a company's unemployment insurance records (1) fails to account or recognize off-the-books employment and (2) will completely ignore employers/contractors who are operating illegally and do not file payroll records with the state. UI audits play an important role in

documenting the incidence and costs of workers misclassification by state; however, they do not provide a complete picture of illegal labor practices in the state.

Incidence of Misclassification and Wage Theft in Kansas

In 2020, 21% of workers in the construction industry in Kansas were either misclassified or working "off-the-books. These results indicate that 30,905 workers in the construction industry were misclassified or working off-the-books in 2020. To estimate the impact of payroll fraud at these unscrupulous employers in the construction industry, this report multiplies the number of misclassified workers and those workers working off-the-books (30,905) by the average income of these workers. Because data is not available on the earnings of construction workers who are the victim of payroll fraud, this report makes certain assumptions about workers average annual incomes in construction in Kansas. This report presents two estimates of mean annual wages for carpenters' earnings. According to the U.S. Bureau Statistics, the first estimates assume potential annual earnings of legally employed at \$30,000 per year. This assumption represents a very lower bound estimate that approximates the 10th through the 25th percentile of annual earnings for carpenters. A more reasonable estimate for carpenters' annual earnings is \$50,000 annually. This represents the 50% percentile or medium earnings for carpenters as reported by the Bureau of Labor Statistics.

To calculate payroll fraud in Kansas, this will utilize the methodology set out by Ormiston, Belman, and Erlich in their methodological paper (2020)³. There are several studies that have examined the extent of illegal employment in the construction industry. Their methodology has been to compare government data on legal employment to household surveys that capture total employment in the construction industry. Legal employment in the construction sector can be derived from analyzing employers' payroll records that are submitted to the appropriate state unemployment agencies in the various states. These records that are compiled at the state agencies are aggregated by the U.S. Department of Labor and are published as the Quarterly Census of

¹ U.S. Bureau of Labor Statistics. Occupational Employment and Wage Statistics. Occupation Employment and Wages, May 2020.

² Occupational Employment and Wage Statistics. Occupational Employment and Wages, May 2021. https://www.bls.gov/oes/current/oes472031.htm

³ Ormiston, Russell, Dale Belman, and Mark Erlich. *An Empirical Methodology to Estimate the Incidence and Costs of Payroll Fraud in the Construction Industry*. January 2020. https://stoptaxfraud.net/wp-content/uploads/2020/03/National-Carpenters-Study-Methodology-for-Wage-and-Tax-Fraud-Report-FINAL.pdf

Employment and Wages (QCEW). The QCEW captures approximately 95% of all wage and salary civilian employment in the various states.

• Utilizing the most conservative estimate of earnings of \$30,000, these 33,512 would cost employers \$2.1 billion in wages, benefits and contributions to the social insurance programs in the state. As a result of unscrupulous employers engaging in payroll fraud, these employers are estimated to have paid \$984.5 million and \$1.13 billion. This fraudulent behavior saved those employers engaging in worker misclassification and payroll theft between \$302.7 million and \$160.7 million. Under the assumption of income equal to \$50,000, this fraudulent behavior saved those employers engaging in worker misclassification and payroll theft between \$504.6 million and \$267.9 million.

Table 9: Estimated Costs of Payroll Fraud in	Kansas Construction	Industry
	\$30,000 / yr.	
Total Labor Costs		
If Workers Hired Legally	\$38,410	\$64,019
If Workers Hired Fraudulently	Min \$29,376	Min \$48 960
	Max \$33,614	Max \$56,203
Direct Impact of Payroll Fraud		
Overtime and Premium Pay Not Received	\$20.9 Million	\$34.9 Million
Worker's Compensation Fund Shortfall	\$44.8 Million	\$74.7 Million
Unemployment Insurance Fund Shortfall	\$18.1 Million	\$30.2 Million
Employer Share of FICA Transferred to Workers	\$76.9 Million	\$128.2 Million
Federal Income Tax Shortfall	\$35.0 Million	\$107.3 Million
(Utilization of 2020 Income Tax Schedule)		
Kansas Income Tax Shortfall	\$13.8 Million	\$50.0 Million
(Utilization of 2020 Income Tax Schedule)		
Number of Workers Affected	33,512	33,512

Misclassification and wage theft in the construction industry in Kansas resulted in a \$44.8 Million shortfall in worker compensation programs in 2020 using an annual income of \$30,000. Utilizing an annual income of \$50,000, the shortfall in worker compensation is estimated to be \$74.7 million.

- Kansas unemployment insurance programs had a shortfall between \$18.1 million and \$30.2 million in the construction industry in 2020.
- Workers in Kansas were denied overtime between \$20.9 million and \$34.9 million in the construction industry in 2020.
- The largest savings to employers in Kansas that are engaging in misclassification and wage theft is the transfer of the employer's share of Social Security and Medicare to workers. Utilizing an annual income of \$30,000, this transfer was \$76.9 million from employers and workers. Utilizing an income of \$50,000 this transfer is estimated to be \$128.2 million.
- Losses to federal income taxes revenues were estimated utilizing tax schedules for 2020.
 Utilizing an income of \$30,000, federal income tax losses are estimated to be \$35.0 million.
 Utilizing an income of \$50,000, federal income tax losses are estimated to be \$107.3 million.
- Losses to State of Kansas income taxes revenues were estimated utilizing tax schedules for 2020. Utilizing an income of \$30,000, Kansas income tax losses are estimated to be \$13.8 million. Utilizing an income of \$50,000, Kansas income tax losses are estimated to be \$50.0 million.

INTRODUCTION

This report is a further step in analyzing the economic implications of employee misclassification and wage theft for both the public and private sector in the State of Kansas. For decades, the construction industry has provided a pathway for non-college educated workers to develop employable skills and secure well-paying middle class jobs that have served as a backbone for communities around the United States. For the most part, the construction industry has promulgated labor practices that provide very good wages and benefits, worker education and training programs, and joint-labor-management cooperation. However certain sectors of the construction industry illustrate some of the worst labor practices in the country: meager and low paying wages, no benefits, unsafe working conditions, wage theft and payroll fraud.

The driving force in these illegal labor practices has been driven by the pursuit on the part of unscrupulous employers of dramatically decreasing labor costs. As a result of these unscrupulous practices, it has made it practically impossible for law-abiding contractors to effectively compete with these unscrupulous firms who have a significant cost advantage because of this illegal activity. The foundation of employment law is the right to be paid for the work we do in a timely fashion, to have our health and safety protected on the job, and to be eligible for social safety net programs such as workers' compensation, Social Security, and unemployment insurance.

Across the State of Kansas far too many employers are not playing by the rules, denying workers these basic rights. This is primarily the result of employers illegally misclassifying their workers as independent contractors. This allows them to save approximately one-third of their labor costs by not paying their taxes, not paying into Social Security and unemployment insurance, and not paying legally required workers' compensation insurance coverage. While this results in higher profits for these employers, these actions have real consequences: these workers—now considered independent contractors—are denied their legal rights as employees and are left without the most fundamental protections on the job. In far too many instances, these independent contractors are also the victims of wage theft. Sometimes workers are paid late. Sometimes workers are only paid for a fraction of their hours worked. And sometimes, workers are not paid at all. Wage theft puts workers and their families in the untenable position of being unable to pay rent on time, buy groceries, or afford childcare. With many affected workers already struggling to

make ends meet, wage theft can push families' already precarious financial situations over the edge. While workers bear the primary burden of misclassification and wage theft, the ramifications of these illegal labor practices ripple throughout Kansas society. Employers who misclassify and refuse to pay their workers are able to lower their labor costs, thereby making it much harder for legitimate employers who play by the rules to compete, and Kansas taxpayers are often left holding the bill. They must cover revenue shortfalls because these employers evade required taxes and associated costs. Worker misclassification and wage theft in Kansas means taxpayers must pay increased social insurance expenses to support the victims of misclassification and wage theft. In sum, these employers are cheating workers, cheating legitimate employers who play by the rules, and cheating taxpayers in Kansas.

One of the most dominant results of these illegal practices is payroll fraud. Payroll fraud is the result of two crucial factors: (1) misclassifying employees as independent contractors and (2) paying workers "off-the-books" in cash-only arrangements. Employees utilize these practices to evade legal responsibilities of paying overtime rates and making the required contributions to social insurance programs. A direct result of these practices by unscrupulous employers is that they inflict substantial harm on workers who do not receive required overtime pay and are denied their legal rights to unemployment insurance, Social Security, and Medicare benefits. In addition, other sectors of the economy are harmed. Payroll fraud defunds the social programs which results in increased unemployment insurance and workers compensation tax rates on those businesses that play by the rules; it also increases the drain on other income supporting programs which the public sector in the state has to pay.

A direct method that has been used extensively to directly measure the incidence and cost of worker misclassification are state-level unemployment (UI) audits in the construction sector. However, there are several disadvantages to this method. First, and most importantly, this direct method of measuring misclassification required the cooperation of State Departments of Labor. The documents received by the State of Kansas do not provide sufficient documentation to conduct a meaningful analysis of misclassification and wage theft in Kansas. The review of state audits that review a company's unemployment insurance records (1) fails to account or recognize off-the-books employment and (2) will completely ignore employers/contractors who are operating illegally and do not file payroll records with the state. UI audits play a vital role in documenting

the incidence and costs of workers misclassification by state; however, they do not provide a complete picture of illegal labor practices in the state.

What is worker Misclassification?

Employee misclassification is defined as the case where employers treat workers as independent contractors that should otherwise be wage or salaried employees. If an employee is classified as an independent contractor, the employers are not required to pay a variety of payroll-related taxes, fees, and benefits (e.g., "Social Security" taxes, Medicare taxes, workers compensation, pension, and health benefits, etc.)

There are a number of different practices whereby misclassification and wage theft are accomplished. First, employers may hire labor as self-employed independent contractors and provide them with a 1099—Miscellaneous Income for tax purposes. A growing and emerging problem takes the form of simply paying labor with cash with no trail of the independent contractor agreement. State and federal revenue bases are significantly impacted when employees are improperly classified as independent contractors. The Internal Revenue Service reports that voluntary compliance in reporting income varies significantly across groups of individual taxpayers. Among those filing tax returns, wage earners (W-2 employees) reported 99% of their wages; self-employed individuals who received a 1099 reported 68% of their income; and "informal suppliers" – self-employed individuals who operate informally on a cash basis – report only 19% of their income on their tax returns.⁴

It is important to note there have always been legitimate independent contractors. The problem is not the presence of legitimate independent contractor firms. The problem is the unscrupulous employers who continue to hire workers but illegally misclassify them as independent contractors to increase their bottom-line profits.

According to the Internal Revenue Service, the distinction of whether a worker is an independent contractor, or an employee depends on the relationship between the worker and the business. There are three categories to examine:⁵

⁴ Taxpayer Compliance. Analyzing the Nature of the Income Tax Gap. United States General Accounting Office. GAO/T-GGD-97-35.

⁵ https://www.irs.gov/newsroom/irs-reminds-business-owners-to-correctly-identify-workers-as-employees-or-independent-contractors.

- **Behavioral Control** Does the company control or have the right to control what the worker does and how the worker does the job?
- **Financial Control** Does the business direct or control the financial and business aspects of the worker's job. Are the business aspects of the worker's job controlled by the payer? (Things like how the worker is paid, are expenses reimbursed, who provides tools/supplies, etc.)
- **Relationship of the Parties** Are there written contracts or employee type benefits (i.e., pension plan, insurance, vacation pay, etc.)? Will the relationship continue and is the work performed a key aspect of the business?

To address the problem of misclassification, more than twenty states have adopted the ABC test for determining whether an individual is an employee or an independent contractor for purposes of coverage of certain workplace laws. The ABC test got its name from the three, interlocking elements of the test—parts (A), (B), and (C). It establishes a presumption that an individual performing services for an employer is an employee, not an independent contractor, unless the employer can establish three factors:

- (A) The work is done without the direction and control of the employer.
- (B) The work is performed outside the usual course of the employer's business.
- (C) The work is done by someone who has their own, independent business or trade doing that kind of work.

By establishing a presumption of employee status and shifting the burden onto the employer to demonstrate the individual is truly an independent contractor in business on their own, the ABC test establishes a strong, protective, pro-employee test, which streamlines the process for workers to prove they are employees who have been misclassified as independent contractors.

The Kansas Employment Security Law relies on parts (A) and (B) of the ABC test. The Court of Appeals of Kansas notes that there is "no absolute rule" for determining when a worker is an independent contractor, but that an employer's right to control his workers is the "most significant aspect of the employer-employee relationship." See *Crawford v. Dept of Human Resources*, 845 P.2d 703, 705-06 (Kan. Ct. App. 1989).

The State of Kansas has made it clear who is and who is not an employee in the State. Employment is defined in K.S.A. 44-703, Chapter 44, Article 7. According to this statute, employment means that the services performed by an individual for wages under any contract of hire is employment unless it is shown that:

1. The individual has been and will continue to be free from control or direction over the performance of the services, both under the individual's contract of hire and in fact;

2. The service is either outside the usual course of the business for which the service is performed or that the service is performed outside of all the places of business of the enterprise for which the service is performed.

In determining whether a worker is an employee or an independent contractor, the Kansas Department of Labor states that the right of control, whether or not exercised, is the most principal factor in determining whether a worker is an employee or independent contractor. They state that the right of control, whether or not exercised, is the most principal factor in determining the relationship. An employer-employee relationship exists when an employer has the **right** to exercise control over the manner and means by which the individual performs services. The right to discharge a worker at will and without cause is compelling evidence of the right of direction and control.⁶

Previous Studies on Payroll Fraud and Wage Theft

A number of studies have shown the problem of misclassification and wage theft is acute in certain sectors of the economy as well as the overall economy. The issue of misclassifying employees as independent contractors is a growing problem for the unemployment system and state and local revenue in Kansas and other states, as well as the federal government. Table 1 illustrates a number of misclassification studies that have been undertaken over the years. I have attached to this report a listing of the sources for the results presented in Table 1.

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⁶ Kansas Department of Revenue. Misclassification of Workers. https://www.kdor.ks.gov/Apps/Misc/Miscellaneous/MisclassFAQ#7

TABLE 1
Prevalence of Employer Misclassification in All Industries and the Construction Sector

	Low	Moderate	High
All Industries - 2000 (Nine States)	5-10%	13-23%	29-42%
California			29.0%
Colorado			34.0%
Connectucut			42.0%
Maryland		20.0%	
Minnesota		14.0%	
Nebraska	10.0%		
New Jersey	9.0%		
Wisconsin		23.0%	
Washington	10.0%		
All Industries (United States) - 1996		15.0%	
All Industries (Massachusetts) - 2004	13.0%	19.0%	
All Industries (Maine) - 2005	11.0%		
All Industries (Illinois) - 2006		18.0%	
All Industires (New York) -2007	10.0%		
All Industries (Minnesota) - 2007		14.0%	
All Industries (Pennsylvania) - 2008	9.0%		
All Industries (Michigan) - 2009	8.4%		
All Industries (Ohio) -2009			
All Industires (Wisconsis) - 2009			44.0%
All Industries (Washington) - 2019		12.7%	
All Industries (Rhode Island) - 2022	12.2%		
Construction Sector (Massachusetts) - 2004	14.0%	24.0%	
Construction Sector (Maine) - 2005	14.0%		
Construction Sector(Indiana) - 2010		16.8%	
Construction Sector (Kentucky) - 2011	8.0%		
Construction Secctor - Tennessee (2010)		13.5%	
Construction Sector (Wisconsin) - 2021	9.0%		
Construction Sector (Minnesota) 2021	5.0%		
Construction Sector (Illinois) - 2021		13.0%	
Construction Sector (Rhode Island) - 2022		17.1%	

In a Massachusetts study by Carre and Wilson (2004), the authors reported that the moderate statewide rate for misclassification was 19%; in that same study they reported a

misclassification rate of 24% in the construction sector.⁷ In a Maine study by Carre and Wilson (2005), the authors found that the rate of misclassification in the construction sector in Maine was 24%.⁸ In New York, the statewide rate of misclassification for the period 2005-2008 was 10%, while the rate of misclassification in the construction sector was 15%.⁹ In a study by Belman and Block (2009), the authors found that 8.4%, of Michigan employees are misclassified, either by being classified as self-employed or by receiving payments that were improperly recorded.¹⁰ Across all industries, misclassifying employers misclassified 23.5% of their employees; in the construction industry, the authors found that misclassifying employers who engaged in misclassification misclassified 18.9% of their employees; in the trucking industry, misclassifying employers misclassified 20.1% of their employees. In study by Kelsay, Surgeon, and Pinkham (2006) the authors that the rate of employers misclassifying as a percentage of all employers in 2005 was 8.6%; more alarming was that the percentage of misclassified workers as a percentage of the workforce at misclassifying employers was 27.6% in 2005.¹¹

An examination of audit studies on misclassification in the construction industry over the past 17 years has determined that the moderate rate of employer misclassification is between 13% and 24%. In a report by Kelsay and Sturgeon, the authors found that the misclassification rate in the construction sector in Indiana was 16.8%. In a report by Xu and Erlich (2019), the authors found that the average misclassification rate across employers was 12.7%. In a recent study on misclassification, Goodell and Manzo (2021) analyzed the cost of wage theft and payroll fraud in the construction industries of Wisconsin, Minnesota, and Illinois. The authors found that the share

⁷Carre, Francois, PhD, and Randall Wilson. *The Social and Economic Costs of Employee Misclassification in Construction*. Center for Social Policy. J.W. McCormick Graduate School of Public Policy Studies. Elaine Bernard, PhD and Robert Herrick, ScD, Principal Investigators. December 17, 2004.

⁸Carre, Francois, PhD, and Randall Wilson. *The Social and Economic Costs of Employee Misclassification in the Maine Construction Industry*. Center for Social Policy. J.W. McCormick Graduate School of Public Policy Studies. Elaine Bernard, PhD and Robert Herrick ScD, Principal Investigators. April 25, 2005.

⁹Donahue, Linda H, James Ryan Lamare and Fred B. Kotler, J.D. *The Cost of Worker Misclassification in New York State*. ILR Collection. Research Studies and Reports. Cornell University ILR School. 2007.

¹⁰ Belman, Dale L. and Richard Block. *Informing the Debate. The Social and Economic Costs of Employee Misclassification in Michigan*. Michigan State University. Institute for Public Policy and Social Research.

¹¹ Kelsay, Michael P., PhD., James I Sturgeon, PhD, and Kelly D. Pinkham, M.S. *The Economic Costs of Employee Misclassification in the State of Illinois*. A Report by the Department of Economics, University of Missouri– Kansas City, December 2006.

¹² Kelsay, Michael P. and James I Sturgeon. *The Economic Costs of Employee Misclassification in the State of Indiana*. A Report by the Department of Economics, University of Missouri – Kansas City, September 16, 2010. ¹³ Xu, Lisa, and Mark Erlich. *Economic Consequences of Misclassification in the State of Washington*. Harvard Labor and Worklife Program. December 2019.

of the workforce misclassified in Wisconsin, Minnesota, and Illinois in 2018 were 9%, 5%, and 13%, respectively. They additionally found that workers suffering from payroll fraud during 2018 for Wisconsin, Minnesota, and Illinois were 10%, 23%, and 20%, respectively.¹⁴ In a report by Ormiston and Juravick (2022), the authors analyzed worker misclassification and wage theft in Rhode Island. 15 For the period 2016-2021, the authors found that the percentage of employers misclassifying employees in all industries was 12.2% for all audits and 17.1% for all audits in construction. The authors further found that the percentage of employers misclassifying wages (i.e., employers who underreport total wages) for the period 2016-2021 was 23.2% for all industries and 32.9% for the construction sector. In a report by the Joint Legislative Audit and Review Commission in Virginia (2012), they report that the percentage of employers found to be misclassifying workers in the construction industry was 33% which is substantially higher that studies on the construction sector reported in Table 1.16 One explanation for the higher misclassification rate in this study is that they conducted targeted audits as opposed to random audits. Additionally, it should be noted that most studies on the construction sector contained in Table 1 were conducted in states with high union densities in the construction sector. The fact that construction union densities may be correlated with employer misclassification rates may be a reason for the high misclassification rate in Virginia. It may possibly provide evidence that the range of misclassification rates reported in Table 1 between 13% to 24% may be on the low end of providing estimates of employer misclassification nationwide.

Although these numbers are significant, an examination of workplace surveys in Texas and major Southern cities found that 41% of workers were misclassified or "working of-the-books." Although there are a number of reasons why we witness such a large discrepancy, one of the major reasons is the incidence of off-the-books workers. Earlier studies on misclassification in the construction industry focused on unemployment insurance audits at the state level. These unemployment insurance audits focus only on the employment records of employers with the state agency. This approach of earlier studies ignores cash-only payments to workers and the presence

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¹⁴ Goodell, Nathaniel, and Frank Manzo. *The Costs of Theft and Payroll Fraud in the Construction Industries of Wisconsin, Minnesota, and Illinois. Midwest Economic Policy Institute.* January 14, 2021.

¹⁵ Ormiston, Russell, and Tom Juravich. Worker Misclassification and Wage Theft in Rhode Island. Institute for Construction Economic Research (ICERES). February 2022.

¹⁶ Joint Legislative Audit and Review Commission. *Report to the Governor and the General Assembly of Virginia.* June 2020.

of constructor contractors who operate entirely off-the-books. This behavior completely evades the analysis of the problem for the various state agencies.

Given the costs and sampling issues associated with surveys of the problem at the state level, researchers have analyzed the discrepancies between government data in order to analyze the presence of payroll fraud. As noted by Ormiston, Belman, and Erlich (2020), statewide estimates in Tennessee, New Jersey and California found 11% to 21% of the construction workforce was either misclassified or working off-the-books. Studies in New York City and Los Angeles County found that these rates of misclassification and working off-the-books is higher in metropolitan areas; rates were between 25% to 30% in these two areas.

Methodology Used to Calculate Misclassification and Wage Theft in Kansas

In order to calculate payroll fraud in Kansas, I will utilize the methodology set out by Ormiston, Belman, and Erlich in their paper (2020). There are several studies that have examined the extent of illegal employment in the construction industry. Their methodology has been to compare government data on legal employment to household surveys that capture total employment in the construction industry. Legal employment in the construction sector can be derived from analyzing employers' payroll records that are submitted to the appropriate state unemployment agencies in the various states. These records that are compiled at the state agencies are aggregated by the U.S. Department of Labor and are published as the Quarterly Census of Employment and Wages (QCEW). The QCEW captures approximately 95% of all wage and salary civilian employment in the various states.

In order to estimate total employment in any industry, researchers have relied upon two-large-scale representative household surveys that represent solid data sources for economists: the Current Population Survey (CPS) and the American Community Survey (ACS). The primary advantage of the American Community Survey is the sample size. It is the largest survey of workers except the decennial census and is reported on an annual basis and is the most significant advantage over the CPS, particularly when analyzing state level estimates of payroll fraud. The ACS represents the best method for projecting total industry employment at the state level.

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¹⁷ Ormiston, Russell, Dale Belman, and Mark Erlich. *An Empirical Methodology to Estimate the Incidence and Costs of Payroll Fraud in the Construction Industry*. January 2020.

From a methodological point of view, the utilization of income underreporting rates is preferable to the number of tax filings. This approach allows one to relax the assumption that every tax filer is operating entirely within the bounds of the law. Therefore, this approach incorporates workers who may operate legally in some transactions – reporting to the IRS – but may very likely to conduct business on the side in certain other transactions. This would include wage and salary employment who conduct work on the side, as well as sole proprietors who report income documented on 1099-MISC forms but do not report cash only payments.

This relationship between income underreporting and illegal employment is consistent with research conducted by the Internal Revenue Service. In a 2016 report by the Internal Revenue Service, they reported only 1% of wages and salaries across industries was misreported on tax returns (W-2 wage and salary).¹⁸ On the other hand, the IRS reported that 64% of nonfarm proprietor income is underreported on tax returns. One can assume that off-the-books arrangements are strongly correlated with higher degrees of underreporting.

The Problems of Misclassification - Detailed Findings.

Misclassification arises from two potential sources. First, an employer may claim that a worker meets the standard as defined by the Internal Revenue Service and the State of Kansas and is, in fact, an independent contractor. This may simply be an error, or the employer may be attempting to avoid the legal and financial responsibilities they would incur if a person were classified as an employee rather than an independent contractor. The second source of misclassification may be a situation of an unreported worker whose employment either as an independent contractor is simply not reported in order to avoid the legal and financial responsibilities for the worker.

If an employee is classified as an independent contractor, the "employer" is not required to withhold a variety of payroll-related taxes, fees, and benefits (e.g., "Social Security" and Medicare taxes, state and federal income taxes, unemployment insurance, workers compensation, and pension and health benefits.) Not only are these costs shifted to the individual worker, the "independent contractor" is also not fully protected by various state and federal employment laws (minimum wage and overtime requirements, workers compensation protection, the right to form a

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¹⁸ Internal Revenue Service. Research, Applied Analytics & Statistics. Federal Tax Compliance Research: Tax Gap Estimates for Tax Years 2014-2016. Publication 1415 (Rev 10-2022).

union and bargain collectively, etc.) and may, incorrectly believe he or she is protected by Kansas employment laws.

The issue of misclassifying employees as an independent contractor is a growing problem for the unemployment insurance system and state and federal revenues in Kansas and other states, as well as the federal government. This occurs because employers remit their unemployment taxes based on their payroll. Recent studies have shown that misclassification by employers is problematic. For example, in the study by Xu and Erlich (2019), the rate of misclassification by employers in all industries in Washington was 12.7% ¹⁹ In a study by Ormiston and Juravich (2022), the authors found that the rate of misclassification in all industries was 12.2%.²⁰ The problem is more acute in the construction sector. In a study by Kelsay and Sturgeon (2010) they found that the rate of misclassification in the construction sector was 18.8%.²¹ In the study by Ormiston and Juravich (2022), the authors found that the rate of misclassification in the construction sector was 17.1%.²² In the study by Goodell and Manzo (2021) on the cost of wage theft and payroll fraud in the construction industries of Wisconsin, Minnesota, and Illinois, the authors found that the rate of misclassification in the construction sector during prime construction season in Wisconsin, Minnesota and Illinois were 6%, 10%, and 23%, respectively.²³ The authors stress that the problem of misclassification is not the only form of payroll fraud in the construction sector. Workers may report that they are self-employed independent contractors and accept payments from project owners or contractors "under the table" in cash. Goddell and Manzo (2021) report that the share of the workforce that is a victim of payroll fraud in Wisconsin, Minnesota, and Illinois in the construction sector during prime construction season were 8%, 26%, and 25%, respectively; the overall level of payroll fraud the Upper Midwest was 21%.

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¹⁹ Xu, Lisa, and Mark Erlich. *Economic Consequences of Misclassification in the State of Washington*. Harvard Labor and Worklife Program. December 2019.

²⁰ Ormiston, Russell, and Tom Juravich. Worker Misclassification and Wage Theft in Rhode Island. Institute for Construction Economic Research (ICERES). February 2022.

²¹ Kelsay, Michael P. and James I Sturgeon. *The Economic Costs of Employee Misclassification in the State of Indiana*. A Report by the Department of Economics, University of Missouri – Kansas City, September 16, 2010. ²² Ormiston, Russell, and Tom Juravich. *Worker Misclassification and Wage Theft in Rhode Island. Institute for Construction Economic Research (ICERES)*. February 2022.

²³ Goodell, Nathaniel, and Frank Manzo. *The Costs of Theft and Payroll Fraud in the Construction Industries of Wisconsin, Minnesota, and Illinois. Midwest Economic Policy Institute.* January 14, 2021

The utilization of the American Community Survey (ACS) is one method of projecting total industry employment at the state level. The total employment reported in the table below is derived from the 2019 American Community Survey (ACS) one-year estimates for Kansas. Because the ACS doesn't ask individuals about any second jobs they may have, the estimates taken from the ACS are augmented with data from the Current Population Survey. An analysis of the data illustrates the fact that there are consistently more workers reported in the construction industry than are reported in payroll data, indicating significant misclassification in Kansas (Table 2). Total industry employment is obtained from the ACS. The compliant group is derived from employer payroll records from the Bureau of Economic Analysis (BEA) which reports data by industry group. Approximately 31% of construction workers were misclassified in Kansas in 2019.

Table 2: Percentage of Misclassified Workers During 2019 in Kansas

Full Year	Total Industry	Compliant Industry	Misclassified	Percentage of
(2019 Estimates)	Employment	Employment	Workers	Workforce
	ACS	(BEA)	(Difference)	Misclassified
Kansas	92,489	63,735	28,754	31%
Sources(s): The author's a	analysis of data from the	American Community Survey	(Census 2019) and Bureau	u of Economic
Analysis (BEA 2019).				

Sources(s): The author's analysis of data from the American Community Survey (Census 2019) and Bureau of Economic Analysis (BEA 2019)

Misclassification is not the only form of payroll fraud in the construction industry. Many workers report they are self-employed independent contractors and accept payment from project owners or general contractors under the table for cash. Utilizing data obtained from the U.S. Census Bureau Nonemployer Statistics series, approximately 18,000 self-employed independent contractors reported earnings to federal agencies; however approximately 23,000 workers in construction said they were self-employed in construction. This suggests approximately 4,758 workers were paid off-the-books in construction in Kansas.

Table 3: Share of Illegally Employed Workers in Kansas

Table 3; Share of Illegally Employed Workers in Kansas					
Full Year	1st or 2nd Job Self	Self-Employed	Illegally Self Employed		
(2019 Estimates)	Employed in	Nonemployers in	Off-the-Books		
Construction (CPS) Construction (Census) (Difference)					
Kansas 22,788 18,030 4,758					
Source(s): Authors analysis of data from Current Population Survey (Census 2019) and the Nonemployer Statistics (Census)					

Bringing together both estimates together tell us the extent of construction misclassification and payroll fraud in Kansas. It is estimated that 36% of construction workers in Kansas are misclassified or illegally employed.

Table 4; Workers Suffering from Payroll Fraud During Year in Kansas

Full Year	Total Industry	Total Misclassified and	Share of Workforce			
(2019 Estimates)	Employment	Illegally Employed Workers	Suffereing from			
	(ACS)	in Industry	Payroll Fraud			
Kansas	92,489	33,512	36%			
Sources(s); Author's analysis of date from Current Population Survey (Census 2019), Quarterly Census of Employment						
and Wages (BLS, 2019) and Nonemployer Statiustics (Census (2019)						

Economic Costs Associated with Misclassification and Payroll Fraud

Worker misclassification and illegally employed workers exist in the construction industry because of unscrupulous employer practices to avoid legally required tax contributions that are associated with legal employment. As a result of these behaviors by unscrupulous actors in the construction industry, these practices put increased pressure on local and state social assistance programs, bars workers of these legal right to many benefits such as unemployment insurance and workers compensations. Additionally, by skirting their legally required tax contributions on behalf of their employees, they shift the employers' burden onto employees.

In estimating the economic losses because of misclassification and wage theft, this report first addresses the revenue impact to Kansas's workers compensation fund (WC), the unemployment insurance fund (UI), and the shifting of the burden of Social Security and Medicare taxes from unscrupulous employers to construction workers. This report will then estimate the revenue shortfall to federal and state income taxes because of misclassification and other wage theft.

In order to aggregate costs of misclassification and employee theft in Kansas, this analysis will utilize the carpenters' workers annual earnings as a starting point. In order to derive an estimate of the annual wages of carpenters in Kansas, I have utilized the occupational employment and wages from the United State Bureau of Labor Statistics for 2021. The goal is to multiply employer's per-worker cost savings attributable to payroll fraud by the number of misclassified and illegally employed workers in construction in Kansas.²⁴

Because data is not available on the earnings of construction workers who are the victim of payroll fraud, this report makes certain assumptions about workers average annual incomes in construction in Kansas. I present two estimates of mean annual wages for carpenters earnings. According to the U.S. Bureau Statistics, the first estimates assume potential annual earnings of legally employed at \$30,000 per year. This assumption represents a very lower bound estimate that approximates the 10th through the 25th percentile of annual earnings for carpenters.²⁵ A more

²⁴ This approach is derived from the work of Ormiston, Belman and Erich in their paper dated January 20, 2020. Ormiston, Belman, and Erlich. *An Empirical Methodology to Estimate the Incidence and Costs of Payroll Fraud in the Construction Industry. Jan 2020.*

²⁵ U.S. Bureau of Labor Statistics. Occupational Employment and Wage Statistics. Occupation Employment and Wages, May 2020.

reasonable estimate for carpenters annual earnings is \$50,000 annually. This represents the 50% percentile or medium earnings for carpenters as reported by the Bureau of Labor Statistics.²⁶

Table 5 compares the amount and distribution of employers per-worker labor costs when the firm is operating legally versus when they are operating illegally when assuming earnings is equal to \$30,000 (10th-25th Percentile). The results show that an employer that is operating legally must pay \$4,171.67 more of the cost differential as opposed to those employers that are operating illegally for legally required social insurance program (Social Security, Workers Compensation Insurance, and Unemployment Insurance).

Table 5: A Comparison of Per-Worker Labor Costs for Legal Employees and Those Engaging in Payroll Fraud (Assumption: Earnings =\$30,000)

	Legal	Fraudulent Employer	Fraudulent Employer
	Employer	w/premium	w/o Premium
Value to Worker			
Regular Pay	\$29,376.03	\$29,376.03	\$29,376.03
Overtime and Premium Pay	\$623.97	\$0.00	\$0.00
Fringe Benefit / Wage Premium	\$4,238.15	\$4,238.15	\$0.00
Subtotal (1)	\$34,238.15	\$33,614.18	\$29,376.03
LESS Social Security & Medicare (EE share) (2)	\$2,295.00	\$5,142.97	\$0.00
Total - Net Value to Worker	\$31,943.15	\$28,471.21	\$29,376.03
Employer Contribution to Social Insurance			
Social Security & Medicare (ER share)	\$2,295.00	\$0.00	\$0.00
Uenemployment Insurance	\$539.59	\$0.00	\$0.00
Workers Compensation	\$1,337.07	\$0.00	\$0.00
Total - ER Contributions to Social Insurance (3)	\$4,171.67	\$0.00	\$0.00
Totals			
Total Net Value to Worker (1-2)	\$31,943.15	\$28,471.21	\$29,376.03
Total Value to Social Insurance (2+3)	\$6,466.67	\$5,142.97	\$0.00
Total Labor Costs (1+3)	\$38,409.82	\$33,614.18	\$29,376.03
Difference from Legal Employer			
Total Labor Costs Differential from Legal Employer		\$4,795.64	\$9,033.79
% More that Legal Employers Must Pay		14.27%	30.75%
Source: Ormiston, Russell, Dale Belman, and Mark Erlich. An Empi	rical Methodology to	Estimate the Incidence and	d Costs of Payroll
in the Construction Industry. January 2020. page 47			
Source: Racine, Karl A. Illegal Worker Misclassification in the Dis	strict's Construction I	industry. September, 2019.	
Issue Brief and Economic Report.			

²⁶ Occupational Employment and Wage Statistics. Occupational Employment and Wages, May 2021. https://www.bls.gov/oes/current/oes472031.htm

Utilizing calculations from the BEA-ACS methodology, this report calculated that 33,512 workers were misclassified or working off-the-books in the construction industry in Kansas (28,764 misclassified workers and 4,758 workers working "off the books"). Multiplying the estimated number of workers that are misclassified or working off the books by the per-worker cost differential, provides an estimate of the annual costs of payroll fraud for the construction industry in Kansas. It is estimated that the that employers are able to reduce their labor costs by \$302.7 million annually due to fraudulent activities in Kansas.

Table 6: A Comparison of Per-Worker Labor Costs for Legal Employees and Those Engaging in Payroll Fraud (Assumption: Earnings =\$30,000)

	Legal Employer	Fraudulent Employer w/premium	Fraudulent Employer w/o Premium
Illegal Employment	1 .7 .		
Number of Workers	33,512	33,512	33,512
Value to Worker			
Regular Pay	\$984,449,517	\$984,449,517	\$984,449,517
Overtime and Premium Pay	\$20,910,483	\$0	\$0
Fringe Benefit / Wage Premium	\$142,028,883	\$142,028,883	\$0
Subtotal (1)	\$1,147,388,883	\$1,126,478,400	\$984,449,517
LESS Social Security & Medicare (EE share) (2)	\$76,910,040	\$172,351,195	\$150,620,776
Total - Net Value to Worker	\$1,070,478,843	\$954,127,205	\$833,828,741
Social Security & Medicare (ER share)	\$76,910,040	\$0	\$0
Uenemployment Insurance	\$18,082,740	\$0	\$0
Workers Compensation	\$44,807,890	\$0	\$0
Total - ER Contributions to Social Insurance (3)	\$139,800,670	\$0	\$0
Totals			
Total Net Value to Worker (1-2)	\$1,070,478,843	\$954,127,205	\$833,828,741
Total Value to Social Insurance (2+3)	\$216,710,710	\$172,351,195	\$150,620,776
Total Labor Costs (1+3)	\$1,287,189,553	\$1,126,478,400	\$984,449,517
Difference from Legal Employer			
Total Labor Costs Differential from Legal Employer		\$160,711,153	\$302,740,035
% More that Legal Employers Must Pay		14.27%	30.75%

The results show that employers that engage in payroll fraud paid \$984.5 million for labor that should have cost \$1.3 billion if that had been hired and paid legally. The absence of a wage premium leads to a substantial decrease in the net value paid to workers which is slightly offset by a decrease in Social Security and Medicare premiums.

Table 7 compares the amount and distribution of employers per-worker labor costs when the firm is operating legally versus when they are operating illegally when assuming earnings is equal to \$50,000 (50th Percentile or Median Income). The results show that an employer that is operating legally must pay \$6,955 more of the cost differential as opposed to those employers that are operating illegally for legally required social insurance program (Social Security, Workers Compensation Insurance, and Unemployment Insurance).

Table 7: A Comparison of Per-Worker Labor Costs for Legal Employees and Those Engaging in Payroll Fraud (Assumption: Earnings =\$50,000)

	Legal	Fraudulent Employer	Fraudulent Employer
	Employer	w/premium	w/o Premium
Value to Worker			
Regular Pay	\$48,960.05	\$48,960.05	\$48,960.05
Overtime and Premium Pay	\$1,039.95	\$0.00	\$0.00
Fringe Benefit / Wage Premium	\$7,063.58	\$7,063.58	\$0.00
Subtotal (1)	\$57,063.58	\$56,023.63	\$48,960.05
LESS Social Security & Medicare (EE share) (2)	\$3,825.00	\$7,650.00	\$7,490.00
Total - Net Value to Worker	\$53,238.58	\$48,373.63	\$41,470.05
Employer Contribution to Social Insurance			
Social Security & Medicare (ER share)	\$3,825.00	\$0.00	\$0.00
Uenemployment Insurance	\$900.00	\$0.00	\$0.00
Workers Compensation	\$2,230.00	\$0.00	\$0.00
Total - ER Contributions to Social Insurance (3)	\$6,955.00	\$0.00	\$0.00
Totals			
Total Net Value to Worker (1-2)	\$53,238.58	\$48,373.63	\$41,470.05
Total Value to Social Insurance (2+3)	\$10,780.00	\$7,650.00	\$7,490.00
Total Labor Costs (1+3)	\$64,018.58	\$56,023.63	\$48,960.05
Difference from Legal Employer			
Total Labor Costs Differential from Legal Employer		\$7,994.95	\$15,058.53
% More that Legal Employers Must Pay		14.27%	30.76%
Source: Ormiston, Russell, Dale Belman, and Mark Erlich. An Emple	irical Methodology to	Estimate the Incidence and	d Costs of Payroll
in the Construction Industry. January 2020. page 47			
Source: Racine, Karl A. Illegal Worker Misclassification in the Di	strict's Construction I	ndustry. September, 2019.	
Issue Brief and Economic Report.			

Utilizing calculations from the BEA-ACS methodology, this report calculated that 33,512 workers were misclassified or working off-the-books in the construction industry in Kansas. Multiplying the estimated number of workers that are misclassified or working off the books by the per-worker cost differential, provides an estimate of the annual costs of payroll fraud for the construction industry in Kansas. It is estimated that the that employers are able to reduce their labor costs by \$465.4 million annually due to fraudulent activities in Kansas under this scenario.

Table 8: A Comparison of Per-Worker Labor Costs for Legal Employees and Those Engaging in Payroll Fraud (Assumption: Earnings =\$50,000)

	Legal Employer	Fraudulent Employer w/premium	Fraudulent Employer w/o Premium
Illegal Employment	1 7		
Number of Workers	33,512	33,512	33,512
Value to Worker			
Regular Pay	\$1,640,749,196	\$1,640,749,196	\$1,640,749,196
Overtime and Premium Pay	\$34,850,804	\$0	\$0
Fringe Benefit / Wage Premium	\$236,714,693	\$236,714,693	\$0
Subtotal (1)	\$1,912,314,693	\$1,877,463,889	\$1,640,749,196
LESS Social Security & Medicare (EE share) (2)	\$128,183,400	\$287,251,975	\$251,034,627
Total - Net Value to Worker	\$1,784,131,293	\$1,590,211,914	\$1,389,714,569
Social Security & Medicare (ER share)	\$128,183,400	\$0	\$0
Uenemployment Insurance	\$30,160,800	\$0	\$0
Workers Compensation	\$74,731,760	\$0	\$0
Total - ER Contributions to Social Insurance (3)	\$233,075,960	\$0	\$0
Totals			
Total Net Value to Worker (1-2)	\$1,784,131,293	\$1,590,211,914	\$1,389,714,569
Total Value to Social Insurance (2+3)	\$361,259,360	\$287,251,975	\$251,034,627
Total Labor Costs (1+3)	\$2,145,390,653	\$1,877,463,889	\$1,640,749,196
Difference from Legal Employer		\$1,877,463,889	
Total Labor Costs Differential from Legal Employer		\$267,926,764	\$504,641,457
% More that Legal Employers Must Pay		14.27%	30.76%

The results show that employers that engage in payroll fraud paid \$1.6 billion for labor that should have cost \$2.1 billion if that had been hired and paid legally. The absence of a wage premium leads to a substantial decrease in the net value paid to workers which is slightly offset by a decrease in Social Security and Medicare premiums.

Table 9: Estimated Costs of Payroll Fraud in Kansas Construction Industry			
	\$30,000 / yr.	\$50,000 / yr.	
Total Labor Costs			
If Workers Hired Legally	\$38,410	\$64,019	
If Workers Hired Fraudulently	Min \$29,376	Min \$48 960	
	Max \$33,614	Max \$56,203	
Direct Impact of Payroll Fraud			
Overtime and Premium Pay Not Received	\$20.9 Million	\$34.9 Million	
Worker's Compensation Fund Shortfall	\$44.8 Million	\$74.7 Million	
Unemployment Insurance Fund Shortfall	\$18.1 Million	\$30.2 Million	
Employer Share of FICA Transferred to Workers	\$76.9 Million	\$128.2 Million	
Federal Income Tax Shortfall	\$35.0 Million	\$107.3 Million	
(Utilization of 2020 Income Tax Schedule)			
Kansas Income Tax Shortfall	\$13.8 Million	\$50.0 Million	
(Utilization of 2020 Income Tax Schedule)			
Number of Workers Affected	33,512	33,512	

- Misclassification and wage theft in the construction industry in Kansas resulted in a \$44.8 Million shortfall in worker compensation programs in 2020 using an annual income of \$30,000. Utilizing an annual income of \$50,000, the shortfall in worker compensation is estimated to be \$74.7 million.
- Kansas unemployment insurance programs had a shortfall between \$18.1 million and \$30.2 million in the construction industry in 2020.
- Workers in Kansas workers were denied in overtime between \$20.9 million and \$34.9
 Million in the construction industry in 2020.
- The largest savings to employers in Kansas that are engaging in misclassification and wage theft is the transfer of the employer's share of Social Security and Medicare to workers. Utilizing an annual income of \$30,000, this transfer was \$76.9 million from employers and workers. Utilizing an income of \$50,000 this transfer is estimated to be \$128.2 million.
- Losses to federal income taxes revenues were estimated utilizing tax schedules for 2020. Utilizing an income of \$30,000, federal income tax losses are estimated to be \$35.0 million.

Utilizing an income of \$50,000, federal income tax losses are estimated to be \$107.3 million.

 Losses to State of Kansas income taxes revenues were estimated utilizing tax schedules for 2020. Utilizing an income of \$30,000, Kansas income tax losses are estimated to be \$13.8 million. Utilizing an income of \$50,000, Kansas income tax losses are estimated to be \$50 million.

The impact of payroll fraud on state and local income revenues is quite large, However, an exact calculation of federal income taxes is quite complicated since each worker will have different levels of tax obligations based on spousal income, itemized deductions, and other tax issues. This report offers two estimates of federal and state income tax obligations based upon the two estimates of annual earnings presented earlier. The first estimate reports lost federal and state income tax obligations based upon a most conservative estimate of \$30,000 in annual earnings which is in the 10^{th} - 25^{th} Percentile of earnings by carpenters. The second estimate reports lost federal and state income tax obligations based upon \$50,000 in annual earnings which is in the median or 50th Percentile of earnings by carpenters in Kansas.

The first estimate of \$30,000 in annual earnings makes certain assumptions about the 30,905 workers misclassified or illegally employed in Kansas. In this analysis, the report assumes that all workers take the standard deduction and have no other income. I have utilized the 2020 tax rates in calculating the economic losses for federal tax revenues.²⁷

This report provides two estimates for lost federal and state income taxes. The total misclassified workers from the analysis was 28,754. The total numb. of workers that that were "informal suppliers," self-employed individuals who operate informally on a cash basis (illegally self-employed off the books is estimated at 4,758 workers. The total number of misclassified workers and workers that are illegally self-employed off the books is estimated at 33,512 (28,754 +4,758)

The total misclassified workers from the analysis were estimated at 28,754 workers (Table 2). For the purpose of this analysis, I have assumed that workers that are married at the same

²⁷ Tax Foundation, Fiscal Fact No. 676. November 2019. 2020 Tax Brackets. =33614-24800

proportion as all construction workers.²⁸ Assuming that a single worker that operates in a fraudulent employment arrangement earns \$33,614 (Table 5), the individual would owe \$2,350 in federal income tax. A married worker earning \$33,614 would only owe \$881 in federal income tax due to the increase in the standard deduction for a married worker. If approximately 57% of the 28,754 misclassified workers are married and the rest of the workers are unmarried, the estimate for the federal government tax obligation is **\$44.1 million annually**. Applying an estimate of the income underreporting rates by the IRS of 65%, the estimate of federal income tax obligations that are not collected is **\$28.7 million annually**.

The total number of workers that that were "informal suppliers," self-employed individuals who operate informally on a cash basis (illegally self-employed off the books is estimated at 4,758 workers. Assuming that a single worker that operates in a fraudulent employment arrangement earns \$33,614 (Table 5), the individual would owe \$546 in federal income tax. A married worker earning \$33,614 would owe \$295 in federal income tax due to the increase in the standard deduction for a married worker. If approximately 57% of the 4,758 illegally self-employed off the books misclassified workers are married, and the rest of the workers are unmarried, the estimate for the federal government tax obligation is **\$7.2 million annually**. Applying an estimate of the income underreporting rates by the IRS of 12%, the estimate of federal income tax obligations that are not collected is **\$6.3 million annually**.

The total estimate of federal income tax obligations for misclassified workers and workers that operate informally on a cash basis (illegally self-employed off the books) is **§35.0 million** annually.

To calculate the shortfall in state income tax obligations, the report uses the same methodology as used in the calculation of the shortfall in federal income tax obligations. The State of Kansas has a graduated income tax rate ranging from 1.5% to a maximum of 5.4% at taxable incomes of \$8,424. The standard deduction for single filers is \$12,400 and, for married couples the standard deduction is \$24,800. If an individual earns \$33,614 (Table 5), the single individual would owe \$546 in state income tax. A married worker earning \$33,614 would owe \$295 in state income tax.

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²⁸ Ormiston, Russell, Dale Belman, and Mark Erlich. January 2020.

If approximately 57% of the 28,754 misclassified workers are married and the rest of the workers are unmarried, the estimate for the state income tax obligation is \$\frac{\text{\$11.6 million annually}}{\text{Applying}}\$ an estimate of the income underreporting rates by the IRS of 65%, the estimate of state income tax obligations that are not collected is \$\frac{\text{\$7.5 million annually}}{\text{\$1.6 million annually}}\$. If approximately 57% of the 4,758 workers that that were "informal suppliers," self-employed individuals who operate informally on a cash basis (illegally self-employed off the books, the estimate for state income tax obligations is \$\frac{\text{\$7.2 million}}{\text{ annually}}\$ annually. Applying an estimate of the income underreporting rates by the IRS of 12%, the estimate of federal income tax obligations that are not collected is \$\frac{\text{\$6.3 million}}{\text{ annually}}\$ annually. The total estimate of state income tax obligations for misclassified workers and workers that operate informally on a cash basis (illegally self-employed off the books) is \$\frac{\text{\$13.8 million}}{\text{ annually}}\$ annually.

The second estimate of \$50,000 in annual earnings makes certain assumptions about the 30,905 workers misclassified or illegally employed in Kansas. I provide two estimates for lost federal and state income taxes. The total misclassified workers from the analysis were 28,754. The total number of workers that that were "informal suppliers," self-employed individuals who operate informally on a cash basis (illegally self-employed off the books is estimated at 4,758 workers. The total number of misclassified workers and workers that are illegally self-employed off the books is estimated at 33,512 (28,754 +4,758)

The total misclassified workers from the analysis were estimated at 28,754 workers (Table 2). For this analysis, I have assumed that workers that are married at the same proportion as all construction workers.²⁹ In this analysis, the report assumes that all workers take the standard deduction and have no other income. I have utilized the 2020 tax rates in calculating the economic losses for federal tax revenues.³⁰ For the purpose of this analysis, I have assumed that workers that are married at the same proportion as all construction workers.³¹ Assuming that a single worker that operates in a fraudulent employment arrangement earns \$56,024 (Table 7), the individual would owe \$5,028 in federal income tax. A married worker earning \$56,024 would only owe \$4,550 in federal income tax due to the increase in the standard deduction for a married worker. If approximately 57% of the 28,754 workers are married and the rest of the workers are

²⁹ Ormiston, Russell, Dale Belman, and Mark Erlich. January 2020.

³⁰ Tax Foundation, Fiscal Fact No. 676. November 2019. 2020 Tax Brackets.

³¹ Ormiston, Russell, Dale Belman, and Mark Erlich. January 2020.

unmarried, the estimate for the federal government tax obligation is **§136.8 million** annually for the 28,754 misclassified workers. Applying an estimate of the income underreporting rates by the IRS of 65%, the estimate of federal income tax obligations that are not collected is **§88.9 million annually** for the 28,754 misclassified workers,

The total number of workers that that were "informal suppliers," self-employed individuals who operate informally on a cash basis (illegally self-employed off the books is estimated at 4,758 workers. If a single worker that operates in a fraudulent employment arrangement earns \$56,024 (Table 7), the individual would owe \$5,028 in federal income tax. A married worker earning \$56,024 would owe \$3,550 in federal income tax due to the increase in the standard deduction for a married worker. If approximately 57% of the 4,756 illegally self-employed off the books are married and the rest of the workers are unmarried, the estimate for the federal government tax obligation for workers "off the books" is \$20.9 million annually. Applying an estimate of the income underreporting rates by the IRS of only 12% of taxpayers, the estimate of federal income tax obligations that are not collected is \$18.4 million annually. The total estimate of federal income tax obligations for misclassified workers and workers that operate informally on a cash basis (illegally self-employed off the books) is \$107.3 million annually.

To calculate the shortfall in state income tax obligations, the report uses the same methodology as used in the calculation of the shortfall in federal income tax obligations. The State of Kansas has a graduated income tax rate ranging from 3.10% to a maximum of 5.70% at taxable incomes of \$30,000. The standard deduction for single filers is \$3,500 and, for married couples the standard deduction is \$8,000. If an individual earns \$56,024 (Table 7), the single individual would owe \$2,280 in state income tax. A married worker earning \$56,024 would owe \$2,108 in state income tax.

If approximately 57% of the 28,754 misclassified workers are married and the rest of the workers are unmarried, the estimate for the state income tax obligation is **\$62.8 million annually** for the 28,754 misclassified workers. Applying an estimate of the income underreporting rates by the IRS of 65%, the estimate of state income tax obligations that are not collected is **\$40.8 million annually.**

If approximately 57% of the 4,754 illegally self-employed off the books are married and the rest of the workers are unmarried, the estimate for state income tax obligation for workers "off

the books" is \$10.4 million annually. Applying an estimate of the income underreporting rates by the IRS of 12%, the estimate of federal income tax obligations that are not collected is \$9.2 million annually. The total estimate of state income tax obligations for misclassified workers and workers that operate informally on a cash basis (illegally self-employed off the books) is \$50.0 million annually.

State of Kansas					
Income Scenario	Misclassified Workers	Illegally Employed Workers	Annual Economic Loss		
C					
Scenario 1: Income - \$30,000					
Uncollected Federal Tax Obligations	28,754	4,758	\$35.0 Million		
Uncollected Kansas Tax Obligations	28,754	4,758	\$13.8 Million		
Total			\$48.8 Million		
Scenario 2: Income - \$50,000					
Uncollected Federal Tax Obligations	28,754	4,758	\$107.3 Million		
Uncollected Kansasi Tax Obligations	28,754	4,758	\$50.0 Million		
Total			\$157.3 Million		

This report has projected the cost disadvantages faced by legal employers compared to unscrupulous contractors that engage in massive payroll fraud in the construction industry. However, the estimates provided in this report vastly underestimate the extent of this payroll fraud in the construction industry. These unscrupulous contractors do not adhere to safety regulations imposed by OSHA. In addition, these unscrupulous employers reduce their labor costs by the way of payroll theft. There are a number of anecdotal reports of wage theft among off-the-book workers in the construction industry. This behavior is especially rampant among vulnerable workers (e.g., undocumented laborers.)³²

³² Juravich, Tom, Essie Ablavsky, and Jake Williams. *The Epidemic of Wage Theft in Residential Construction in Massachusetts*. UMass-Amherst Working Paper Series.

SOURCES FOR TABLE 1

- 1. Planmatics, Inc. For the U.S. Department of Labor Employment and Training Administration. *Independent Contractors: Prevalence and Implications for Unemployment Insurance Programs. February* 2020. https://wdr.doleta.gov/owsdrr/00-5/00-5.pdf
- 2. United States General Accounting Office. Taxpayer Compliance. Analyzing the Nature of the Income Tax Gap. https://www.gao.gov/products/t-ggd-97-35.
- 3. Carre, Francois, PhD, and Randall Wilson. *The Social and Economic Costs of Employee Misclassification in Construction*. Center for Social Policy. J.W. McCormick Graduate School of Public Policy Studies. Elaine Bernard, PhD and Robert Herrick, ScD, Principal Investigators. December 17, 2004. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.679.4695&rep=rep1&type=pdf
- 4. Carre, Francois, PhD, and Randall Wilson. The Social and Economic Costs of Employee Misclassification in the Maine Construction Industry. Center for Social Policy. J.W. McCormick Graduate School of Public Policy Studies. Elaine Bernard, PhD and Robert Herrick ScD, Principal Investigators. April 25, 2005. https://www.researchgate.net/publication/254695491_The_Social_and_Economic_Costs_of_Employee_Misclassification_in_the_Maine_Construction_Industry
- 5. Kelsay, Michael P., PhD., James I Sturgeon, PhD, and Kelly D. Pinkham, M.S. *The Economic Costs of Employee Misclassification in the State of Illinois*. A Report by the Department of Economics, University of Kansas Kansas City, December 2006. https://faircontracting.org/wp-content/uploads/2019/06/Illinois-Employee-Misclassification.pdf
- 6. Donahue, Linda H, James Ryan Lamare and Fred B. Kotler, J.D. *The Cost of Worker Misclassification in New York State*. ILR Collection. Research Studies and Reports. Cornell University ILR School. 2007.
- 7. Office of the Legislative Auditor. State of Minnesota. Evaluation Report. *Misclassification of Employees as Independent Contractors*. November 2007. https://www.auditor.leg.state.mn.us/ped/2007/missclasssum.htm
- 8. Testimony of Patrick T. Beaty. Deputy Director for Unemployment Compensation Programs. Pennsylvania Department of Labor and Industry. Before the House Labor Relations Committee. Public Hearing on House Bill 2400 (Misclassification of Employees as Independent Contractors) April 23, 2008.

- 9. Belman, Dale L. and Richard Block. *Informing the Debate. The Social and Economic Costs of Employee Misclassification in Michigan*. Michigan State University. Institute for Public Policy and Social Research. http://ippsr.msu.edu/publications/ARMisClass.pdf
- 10. Cordray, Richard. Ohio Attorney General. Report of the Ohio Attorney General on the Economic Impact of Misclassified Workers for State and Local Governments in Ohio. February 18, 2009.

 https://iiiffc.org/images/pdf/employee_classification/OH% 20 A G% 20 Ppt% 20 on% 20 Misclassified Complexes Classification/OH% 20 A G% 20 Ppt% 20 on% 20 Misclassified Complexes Classification/OH% 20 A G% 20 Ppt% 20 on% 20 Misclassified Complexes Classified Complexes Complexes
 - $https://iiiffc.org/images/pdf/employee_classification/OH\%\,20AG\%\,20Rpt\%\,20on\%\,20Misclass. Workers. 2009.pdf$
- 11. Wisconsin Department of Workforce Development. *Report of the Worker Misclassification Task Force*. June 2009. https://dwd.wisconsin.gov/misclassification/pdf/2009-task-force-report.pdf
- 12. Xu, Lisa, and Mark Erlich. *Economic Consequences of Misclassification in the State of Washington*. Harvard Labor and Worklife Program. December 2019. https://lwp.law.harvard.edu/files/lwp/files/wa_study_dec_2019_final.pdf
- 13. Ormiston, Russell, and Tom Juravich. *Worker Misclassification and Wage Theft in Rhode Island. Institute for Construction Economic Research (ICERES)*. February 2022. https://www.umass.edu/lrrc/sites/default/files/ICERES-RI%20Worker%20Misclassification%20Report%20%28003%29%20Final.pdf
- 14. Kelsay, Michael P. and James I Sturgeon. *The Economic Costs of Employee Misclassification in the State of Indiana*. A Report by the Department of Economics, University of Kansas Kansas City, September 16, 2010. https://faircontracting.org/wp-content/uploads/2019/11/Indiana-Misclassification-Report.pdf
- 15. Kelsay, Michael P, PhD., and James I. Sturgeon. *The Economic Costs of Employee Misclassification in the Construction Sector in the Commonwealth of Kentucky*. Report by the Department of Economics, University of Kansas Kansas City, September 14, 2011. https://faircontracting.org/wp-content/uploads/2019/11/Kentucky-Final-Report-Sept-2011.pdf
- 16. Canak, William, PhD, and Randall Adams. *Misclassified Construction Employees in Tennessee*. January 15, 2010. https://stoptaxfraud.net/wp-content/uploads/2018/11/TN-payroll-fraud-study-1-15-10.pdf
- 17. Goodell, Nathaniel, and Frank Manzo. *The Costs of Theft and Payroll Fraud in the Construction Industries of Wisconsin, Minnesota, and Illinois. Midwest Economic Policy Institute*. January 14, 2021. https://midwestepi.files.wordpress.com/2020/10/mepi-ilepi-costs-of-payroll-fraud-in-wi-mn-il-final.pdf

18. Ormiston, Russell, and Tom Juravich. *Worker Misclassification and Wage Theft in Rhode Island. Institute for Construction Economic Research (ICERES)*. February 2022. https://www.umass.edu/lrrc/sites/default/files/ICERES-RI%20Worker%20Misclassification%20Report%20%28003%29%20Final.pdf

<u>REFERENCES</u>

- 1. Belman, Dale L. and Richard Block. *Informing the Debate. The Social and Economic Costs of Employee Misclassification in Michigan*. Michigan State University. Institute for Public Policy and Social Research. http://ippsr.msu.edu/publications/ARMisClass.pdf
- 2. Canak, William, PhD, and Randall Adams. *Misclassified Construction Employees in Tennessee*. January 15, 2010. https://stoptaxfraud.net/wp-content/uploads/2018/11/TN-payroll-fraud-study-1-15-10.pdf
- 3. Carre, Francoise. *Independent Contractor Misclassification*. EPI Briefing Paper #403. June 6, 2015. https://www.epi.org/publication/independent-contractor-misclassification/
- 4. Carre, Francois, PhD, and Randall Wilson. *The Social and Economic Costs of Employee Misclassification in Construction*. Center for Social Policy. J.W. McCormick Graduate School of Public Policy Studies. Elaine Bernard, PhD and Robert Herrick, ScD, Principal Investigators. December 17, 2004. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.679.4695&rep=rep1&type=pdf
- Carre, Francois, PhD, and Randall Wilson. The Social and Economic Costs of Employee
 Misclassification in the Maine Construction Industry. Center for Social Policy. J.W.
 McCormick Graduate School of Public Policy Studies. Elaine Bernard, PhD and Robert
 Herrick ScD, Principal Investigators. April 25, 2005.
 https://www.researchgate.net/publication/254695491_The_Social_and_Economic_Costs_
 of_Employee_Misclassification_in_the_Maine_Construction_Industry
- 6. Cordray, Richard. Ohio Attorney General. Report of the Ohio Attorney General on the Economic Impact of Misclassified Workers for State and Local Governments in Ohio. February 18, 2009.
- 7. Donahue, Linda H, James Ryan Lamare and Fred B. Kotler, J.D. *The Cost of Worker Misclassification in New York State*. ILR Collection. Research Studies and Reports. Cornell University ILR School. 2007
- 8. Erlich, Mark and Terri Gerstein. Confronting Misclassification and Payroll Fraud: A Survey of State Labor Standards Enforcement Agencies. Harvard Law School: Labor and Worklife Program. https://lwp.law.harvard.edu/files/lwp/files/misclassification.pdf
- Erlich, Mark. Misclassification in Construction: The Original GIG Economy. ILR Review. DOI: 10.1777/0019793920972331. November 2020. https://lwp.law.harvard.edu/news/misclassification-construction-original-gig-economy

- 10. Goodell, Nathaniel, and Frank Manzo. *The Costs of Theft and Payroll Fraud in the Construction Industries of Wisconsin, Minnesota, and Illinois. Midwest Economic Policy Institute.* January 14, 2021. https://midwestepi.files.wordpress.com/2020/10/mepi-ilepi-costs-of-payroll-fraud-in-wi-mn-il-final.pdf
- 11. Gordon, Colin, Matthew Glasson, Jennifer Sherer and Robin Clark-Bennett. The Iowa Policy Project. *Wage Theft in Iowa*. August 2012. https://www.iowapolicyproject.org/2012docs/120827-wagetheft.pdf
- 12. Cordray, Richard. Ohio Attorney General. Report of the Ohio Attorney General on the Economic Impact of Misclassified Workers for State and Local Governments in Ohio. February 18, 2009. https://iiiffc.org/images/pdf/employee_classification/OH%20AG%20Rpt%20on%20Misclass.Workers.2009.pdf
- 13. Harris, Seth. Deputy Secretary of Labor. Statement of Seth D. Harris, Deputy Secretary, U.S. Department of Labor Before the Committee on Health, Education, Labor, and Pensions. June 17, 2010.
- 14. Kansas Department of Labor. Quarterly Census of Employment and Wages (QCEW). https://klic.dol.ks.gov/vosnet/analyzer/resultsNew.aspx?session=ind202
- 15. Internal Revenue Service. Employer's Supplemental Guide (Supplement to Publication 15 [Circular E], Employer's Tax Guide.
- 16. Internal Revenue Service. A Guide to Informational Returns. http://www.irs.gov/efile/article/0.,id=98114.html.
- 17. Iowa Workforce Development. *Iowa Misclassification Task Force*. 2nd Report. December 20, 2010. https://www.iowaworkforcedevelopment.gov/sites/search.iowaworkforcedevelopment.gov/files/Iowa%20Misclassification%20Task%20Force%202nd%20Report.pdf
- 18. Kan. Stat. § 44-769. Section 44-769 Annual Report on Investigations on Misclassification of Employees. https://casetext.com/statute/Kansas-statutes/chapter-44-labor-and-industries/article-7-employment-security-law/section-44-769-annual-report-on-investigations-on-misclassification-of-employees
- 19. Kansas Department of Labor. Annual Report to the Standing Committee on Commerce of the Senate on Investigations on Misclassification of Employees. 2018-2021.

- 20. Kansas Department of Labor. Annual Report to the Standing Committee on Commerce of the House of Representatives on Investigations on Misclassification of Employees. 2018-2021.
- 21. Kelsay, Michael P., PhD., James I Sturgeon, PhD, and Kelly D. Pinkham, M.S. *The Economic Costs of Employee Misclassification in the State of Illinois*. A Report by the Department of Economics, University of Kansas Kansas City, December 2006. https://faircontracting.org/wp-content/uploads/2019/06/Illinois-Employee-Misclassification.pdf
- 22. Kelsay, Michael P. and James I Sturgeon. *The Economic Costs of Employee Misclassification in the State of Indiana*. A Report by the Department of Economics, University of Kansas Kansas City, September 16, 2010. https://faircontracting.org/wp-content/uploads/2019/11/Indiana-Misclassification-Report.pdf
- 23. Kelsay, Michael P, PhD., and James I. Sturgeon. *The Economic Costs of Employee Misclassification in the Construction Sector in the Commonwealth of Kentucky*. Report by the Department of Economics, University of Kansas Kansas City, September 14, 2011. https://faircontracting.org/wp-content/uploads/2019/11/Kentucky-Final-Report-Sept-2011.pdf
- 24. Mangundayao, Ihna, Celine McNicholas, Margaret Poydock, and Ali Salt. *More than #3 Billion in Stolen Wages Between 2017 and 2020*. Economic Policy Institute. December 22, 2021. https://www.epi.org/publication/wage-theft-2021/
- 25. National Employment Law Project. *Independent Contractor Misclassification Imposes Huge Costs on Workers and Federal Treasuries*. Policy Brief. October 2020. https://www.nelp.org/publication/independent-contractor-misclassification-imposes-huge-costs-workers-federal-state-treasuries-update-october-2020/
- 26. New York Department of Labor. Annual Report of the Joint Enforcement Task Force on Employee Misclassification to Honorable Andrew M. Cuomo, Governor State of New York. February 1, 2015. https://dol.ny.gov/system/files/documents/2021/02/misclassification-task-force-report-2-1-2015.pdf
- 27. Office of the Legislative Auditor. State of Minnesota. Evaluation Report. *Misclassification of Employees as Independent Contractors*. November 2007. https://www.auditor.leg.state.mn.us/ped/2007/missclasssum.htm
- 28. Ormiston, Russell, and Tom Juravich. Worker Misclassification and Wage Theft in Rhode Island. Institute for Construction Economic Research (ICERES). February 2022.

- https://www.umass.edu/lrrc/sites/default/files/ICERES-RI%20Worker%20Misclassification%20Report%20%28003%29%20Final.pdf
- 29. Planmatics, Inc. For the U.S. Department of Labor Employment and Training Administration. *Independent Contractors: Prevalence and Implications for Unemployment Insurance Programs. February 2020.*
- 30. Rhinehart, Lynn, Celine McNicholas, Margaret Poydock, and Inha Mangundayao. *Misclassification, the ABC test, and Employee Status*. Economic Policy Institute. Jun 16, 2022. https://www.epi.org/publication/misclassification-the-abc-test-and-employee-status-the-california-experience-and-its-relevance-to-current-policy-debates/
- 31. Ruckelshaus, Catherine K. *Leveling the Playing Field: Protecting Workers and Businesses Affected by Misclassification*. Testimony of Catherine K. Ruckelshaus, National Employment Law Project. Hearing before the United States Congress, Senate Committee on Health, Education, Labor & Pensions. June 17, 2010. https://www.govinfo.gov/content/pkg/CHRG-111shrg76452/html/CHRG-111shrg76452.htm
- 32. Testimony of Patrick T. Beaty. Deputy Director for Unemployment Compensation Programs. Pennsylvania Department of Labor and Industry. Before the House Labor Relations Committee. Public Hearing on House Bill 2400 (Misclassification of Employees as Independent Contractors) April 23, 2008.
- 33. United States Bureau of Labor Statistics. Quarterly Census of Employment and Wages. https://www.bls.gov/cew/
- 34. United States Census Bureau. American Community Survey (ACS) https://www.census.gov/programs-surveys/acs
- 35. United States Department of Justice. *Twelve Plead Guilty to Tax and Immigration Charges after Undercover Operation Marking Largest Criminal Tax Case in Pee Dee History*. The United States Attorney's Office. District of South Carolina October 21, 2021. https://www.justice.gov/usao-sc/pr/twelve-plead-guilty-tax-and-immigration-charges-after-undercover-operation-marking
- 36. United States Department of Labor. *State Unemployment Insurance Trust Fund Solvency Report.* 2018-2022. U.S. Department of Labor. Office of Unemployment Insurance. Division of Fiscal and Actuarial Services. Marcy 2018-2022. https://oui.doleta.gov/unemploy/docs/trustFundSolvReport2021.pdf

- 37. United States General Accounting Office. *Employee Misclassification. Improved Coordination, Outreach and Targeting Could Better Insure Detection and Prevention.* GAO-09-717. https://www.gao.gov/products/gao-09-717
- 38. Wisconsin Department of Workforce Development. *Report of the Worker Misclassification Task Force*. June 2009. https://dwd.wisconsin.gov/misclassification/pdf/2009-task-force-report.pdf
- 39. Xu, Lisa, and Mark Erlich. *Economic Consequences of Misclassification in the State of Washington*. Harvard Labor and Worklife Program. December 2019. https://lwp.law.harvard.edu/files/lwp/files/wa_study_dec_2019_final.pdf