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The Underground Construction Economy of Washington State: *Size, Cost, and Government Enforcement Efforts*

The 2022 Washington State Legislature directed the Washington State Institute for Public Policy (WSIPP) to conduct a study on the nature and scope of the underground economy in Washington's construction industry. WSIPP was directed to address the size of the underground economy, the resulting costs to the state and workers of the underground economy, and to provide recommendations for potential policy changes. Additionally, WSIPP was tasked with identifying whether greater cohesion and transparency between state agencies is needed to improve detection and enforcement efforts.

This report is organized as follows: Section I compares Washington's construction industry with other states and provides a general background on the underground economy. Section II estimates the size of Washington's underground construction economy and its costs to workers and the state. Section III overviews enforcement actions taken by Washington State agencies. Section IV documents common underground economy-related policies and enforcement efforts in other states. Section V concludes with areas for future study.

Summary

This report provides an overview of the nature and scope of the underground construction economy in Washington.

We estimate the size and cost to workers, Washington State, and the federal government of Washington's underground construction economy by year from 2011-2021. We find that an average of 14.2% of construction workers in the state are not properly reported to payroll and tax authorities per year. We estimate average annual total costs to be $142.6 million to Washington construction workers, $59.8 million to the state, and $315.4 million to the federal government. Estimates vary widely by year, reflecting the uncertainty involved in measuring the underground economy.

We then document the various actions taken by Washington State agencies to detect and enforce underground construction economy activity and comment on opportunities for improved cohesion in their efforts. Conversations with relevant employees reveal that Washington State agencies could mutually improve coordination by sharing more information about their underground economy operations. Finally, we survey underground economy related programs and highlight policies in other jurisdictions that may improve detection and enforcement if implemented in Washington.

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I. Background

In this section, we begin with a general overview of employment in the construction industry. We then detail the underground economy in construction, including its definition, common forms that it takes, factors affecting its prevalence, and associated costs to the public and private industry.

Employment in Construction Industry

The construction industry includes individuals and establishments engaged in the erection of buildings or other engineering projects, preparing sites for construction, or subdividing land for building sites. Construction activities also include renovations, additions, maintenance and repairs, and demolition.[1] Construction is one of the largest industries in the world. In the US, construction makes up 4% to 5% of GDP annually.[2] There are many different roles for workers in the construction industry, including general laborers, supervisors who oversee on-the-ground operations, construction managers or general contractors who bid on projects and hire labor, office workers who document progress and finances, and specialists including roofers, ironworkers, electricians, plumbers, glaziers, and carpenters that are usually brought on as independent contractors.[3]

Exhibit 1

Legislative Assignment

"[An appropriation is made] … solely for the Washington state institute for public policy to undertake a study on the nature and scope of the underground economy and to recommend what policy changes, if any, are needed to address the underground economy in the construction industry, including whether greater cohesion and transparency among state agencies is needed. The report must address the extent of and projected costs to the state and workers of the underground economy. The institute must submit a report to the appropriate committees of the legislature by December 1, 2022."

Engrossed Substitute Senate Bill 5902
Chapter 334, Laws of 2021

Employment in construction is seasonal, higher in the summer months and lower during the winter.[4] Construction employment also tends to be relatively responsive to economic conditions, falling drastically during recessions.[5] Much of this volatility can be explained by the decentralized nature of construction work. Demand for labor is largely dependent on the availability of projects, which are bid on by construction employers. Employers awarded contracts will suddenly need more labor, and employers not awarded contracts may no longer need all their workers.

[1] US Bureau of Labor Statistics. (2023). *Industries at a Glance – Construction: NAICS 23.*

[2] U.S. Bureau of Economic Analysis. *Value Added by Industry: Construction as a Percentage of GDP [VAPGDPC].*

[3] Bureau of Labor Statistics, U.S. Department of Labor (2022, September). *Occupational Outlook Handbook, Construction Laborers and Helpers*; *"Construction Supervisor."* Career Information Center, 9th ed. Department of Labor. (2022, November 16). *Occupational Outlook Handbook, Construction Managers*; Scalisi, T, & Davis, B. (2023). *Types of Subcontractors in Construction.* Procore.

[4] Construction Education Foundation. (2023). *How Does Construction Work Really Change During the Winter.* Associated General Contractors.

[5] Hadi, A. (2011). *Construction Employment Peaks Before the Recession and Falls Sharply Throughout It.* Monthly Labor Review, Bureau of Labor Statistics.

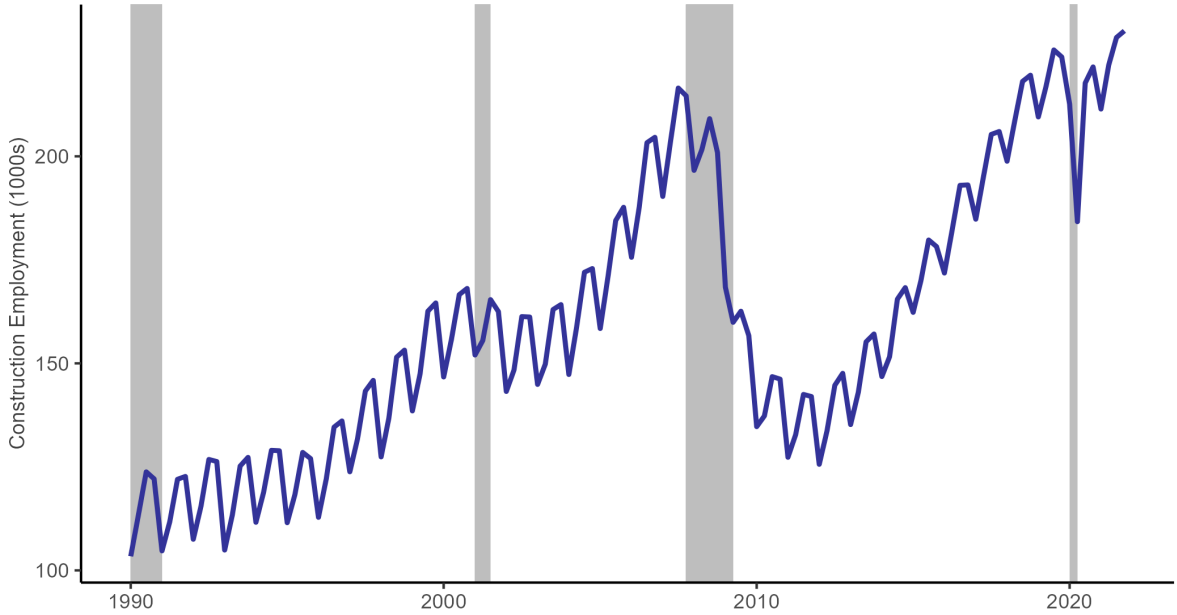
The result is a labor market where workers constantly move between projects and employers. This environment leads many construction workers to seek self-employment as independent contractors, allowing greater flexibility in moving between projects. As a result, the rate of independent contractors that make up the workforce in the construction industry is more than double that of the national average.[6]

Construction in Washington

The construction industry in Washington employed 267,584 workers in 2021, or around 7% of all employment in the state. This is a slightly larger proportion than nationally. Exhibit 2 charts employment in the Washington construction industry since 1990. Like the national construction industry, construction employment in Washington is highly seasonal and responsive to recessions (shown by the shaded years).

Exhibit 2

Construction employment in Washington State, 1990-2022



Note:
Shaded regions represent official US recessions. U.S. Bureau of Labor Statistics. (2023). *All Employees: Construction in Washington [WACONSN].* FRED, Federal Reserve Bank of St. Louis.

[6] Xu, L., & Erlich, M. (2019). *Economic Consequences of Misclassification in the State of Washington.* Harvard Law School Labor and Worklife Program.

Washington is relatively average among states in terms of the size of the construction industry relative to the state.[7] That said, the number of construction workers varies widely across the state. The Seattle-Tacoma-Bellevue Metropolitan Statistical Area ranks 7th out of 384 cities in the number of construction workers despite only being 15th in population.[8] This reflects a disproportionate concentration of construction workers in the state's largest metropolitan area.

Definition and Concept of the Underground Economy in Construction

The Underground Construction Economy (UCE) encompasses all economic activity in the construction industry that would be considered *legal* if it were properly registered and reported to state and federal agencies.

Construction industry employment relationships have tended toward informality due in part to the nature of construction. As discussed in the previous subsection, the demand for labor in construction is driven by the awarding of contracts, meaning that a given employer may suddenly need more workers while another may not. In such a world, a labor market where workers can move between employers and projects as needed is more flexible than a traditional model of employment characterized by rigid employment relationships. The seasonality of construction work also means that employers may only need workers for part of the year. Many construction workers opt for self-employment to allow them to move between jobs. However, the tendency towards informal or contingent employment frequently crosses the line into illegality, landing businesses and workers in the UCE.

Common Underground Construction Practices

One of the most discussed forms of UCE employment in the research literature is when construction businesses hire independent contractors when they legally should be employees. The practice is known as **employee misclassification**.

Misclassification allows employers to reduce labor costs by around 30%.[9] Independent contractors typically do not earn overtime or paid leave and do not receive standard employee fringe benefits like healthcare or retirement benefits. Employers who misclassify also save on contributions to social insurance programs. At the state level, these include workers' compensation (WC) and unemployment insurance (UI).[10] Contributions to federal programs like Social Security and Medicare (together known as FICA after the Federal Insurance Contributions Act) and employment-related taxes are not paid for misclassified employees. Finally, according to the National Labor Relations Act of 1935 (NLRA), misclassifying employees prevents them from collective bargaining and forming unions.[11]

[7] US Census Bureau. (2023). *Industry by Class of Worker for Civilian Employed Population 16 Years and Over* [C27040, ACS 5-year estimates]. [Dataset].
[8] US Bureau of Labor Statistics. (2022). *Occupational Employment and Wage Statistics.*
[9] Xu and Erlich (2019).
[10] In Washington, independent contractors are able to purchase workers' compensation coverage for themselves if they wish to. However, if a worker is misclassified, then their employer should be the one to provide them coverage.
[11] National Labor Relations Act of 1935. 29 U.S.C. §§ 151-169.

While there is a legal distinction between employees and independent contractors, the legal definition of an independent contractor varies between the federal government and individual states. The general guideline for determining employment status is that if an individual is working under the direction and control of an employer, then they are an employee and have a claim to all the legal rights and protections that come with employment.[12] (See Section IV for further discussion of states' independent contractor tests).

Rather than misclassifying workers, some construction businesses will **pay workers under the table** in cash, not reporting their existence to tax authorities. This cash-only practice also allows employers to save on taxes and social program contributions. It also saves workers from paying federal income taxes on their earnings if they choose. However, it should be noted that under this practice, workers are often not paid what they were promised or not paid at all and still do not have access to an employee's legal rights and protections.[13] The actions of misclassifying workers or paying them under the table are collectively known as payroll fraud or wage theft.[14]

Construction **businesses that underreport** their economic activity are in the UCE. Businesses are required to be registered and pay state and local personal property, business & occupation (B&O), and use taxes and collect and submit retail sales taxes. Underreporting business income from jobs or purchases of equipment allows these businesses to avoid paying these taxes.

Finally, otherwise legitimate **independent contractors underreporting their income to local, state, and federal tax authorities** are also considered part of the UCE. This may mean reporting less earnings and purchasing activities than occurred or reporting neither. Independent contractors primarily underreport to save on taxes and social contributions. Like legal employees, they are required to pay federal income tax and FICA. They must also pay other state and local taxes such as personal property, B&O, and use taxes, and collect and submit retail sales taxes.[15] **Unregistered independent contractors** are also part of the UCE. The Washington State Department of Labor & Industries (L&I) requires that all contractors register and remain current in the state database. They must also provide proof that they are bonded and insured to protect consumers in case of an accident.[16]

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[12] Xu & Erlich (2019).

[13] Juravich, T., Ormiston, R., & Belman, D. (2021). *The Social and Economic Costs of Illegal Misclassification, Wage Theft and Tax Fraud in Residential Construction in Massachusetts.* University of Massachusetts Amherst Labor Center.

[14] Goodell, N., and Manzo, F. (2021). *The Costs of Wage Theft and Payroll Fraud in the Construction Industries of Wisconsin, Minnesota, and Illinois Impacts on Workers and Taxpayers.* Midwest Economic Policy Institute.

[15] Washington State Department of Revenue. (2022). *Independent Contractors;* Washington State Department of Revenue. (2022). *Business Tax Structure in Washington State.*

[16] Washington State Department of Labor and Industries. (n.d.). *Problems with a Contractor.*

Prevalence of the UCE

Past work has determined that the practices that constitute underground activity in construction are widespread. Estimates of the share of construction workers misclassified at the state level run anywhere from 5% to 38%.[17] One study of Washington, using data from audits by L&I, found that 19% of construction employers misclassify at least some of their employees in the state.[18] For a more comprehensive list of studies of misclassification, see Appendix I.

Income underreporting amongst independent contractors and other self-employed individuals is also widespread. The Internal Revenue Service (IRS) routinely estimates that more than 50% of sole-proprietor income goes unreported in the US.[19] Other estimates are more cautious. For instance, the Bureau of Economic Analysis estimates an underreporting rate of 35% in 2021.[20] To our knowledge, no estimate exists of the share of independent contractors that misreport *any* income, but the sheer volume suggests that underreporting is widespread.

The extent of other forms of underground activity is harder to estimate. Our search of the UCE literature in the US did not find any academic studies on the number of unregistered contractors at the national or state level. This is likely because individual contractors have very small economic impacts and are difficult to detect. For similar reasons, it is difficult to determine the number of construction businesses that are not registered, do not pay business taxes, or do not collect and submit retail sales tax.

L&I audits, however, suggest that these sorts of violations are fairly commonplace. In fiscal year 2022, L&I conducted over 700 audits on unregistered accounts. The construction industry accounted for 66% of those determined to violate registration requirements. Over the last five fiscal years, L&I has issued roughly 2,000 underground economy violations per year to Washington businesses and contractors.[21] While these numbers are based only on *detected* unregistered contractors and businesses and do not reflect all unregistered construction activity in the state, they give a sense of how common it is to find violations.

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[17] Liu, Y.Y., Flaming, D., & Burns, P. (2014) *Sinking Underground: The Growing Informal Economy in California Construction*. Economic Roundtable; Berard, Y. (2014, September 4). *Tax Cheats are widespread in Texas construction industry.* Star Telegram.

[18] Xu & Erlich (2019).

[19] US Internal Revenue Service. (2016). *Federal Tax Compliance Research: Tax Gap Estimates for Tax Years 2008-2010.* IRS Publication 1415. US Internal Revenue Service. (2016). *Federal Tax Compliance Research: Tax Gap Estimates for Tax Years 2014-2016.* IRS Publication 1415.

[20] Bureau of Economic Analysis. (2022). *State Personal Income and Employment: Concepts, Data Sources, and Statistical Methods.*

[21] WA State Depts. of Labor and Industries, Revenue, and Employment Security. (2022). *Underground Economy Benchmark Report.*

Factors Affecting the Size of the UCE

While research specifically on the construction industry is limited, several factors have been shown to impact the size of the underground economy. Individuals and businesses deciding between legal or illegal activity will generally be influenced by three factors: the payoff for illegal action, the probability of detection, and the severity of punishment if caught.[22] Of the three, however, only policies that impact the payoff have been shown to impact the size of underground economies significantly.[23] For instance, high taxes and labor market and business regulation have been shown to increase underground economies at the country level. These policies increase the relative payoff of underground activity by making compliance with reporting requirements more costly.[24]

Other factors impacting the scale of underground activity are more social. For instance, the term "tax morale" has been used to describe the public and business community's sense of social obligation in paying taxes and has been shown to impact the size of underground economies at the country level.[25]

Likewise, the strength of governance and institutions and the pervasiveness of corruption have been shown to have negative and positive impacts on the size of the underground economy, respectively.[26]

Finally, there is evidence that the underground economy generally grows during recessions. Recessions are marked by steep declines in legal employment relationships as official Gross Domestic Product (GDP) contracts. However, it has been shown that estimated national underground economies increase in output during these times.[27] Workers and businesses sometimes turn to the underground sector to help patch up lost revenue or income.[28] Recessions may, therefore, constitute some degree of shifting economic activity and employment between the legal and underground sectors.[29]

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[22] Medina, L., & Schneider, M. F. (2018). *Shadow economies around the world: what did we learn over the last 20 years?* International Monetary Fund.

[23] Research on increasing the probability of detection and the severity of punishment suggests that these factors are not as impactful as changes in the payoff for illegal action. Dubin, J. A., Graetz, M. J., & Wilde, L. L. (1990). *The effect of audit rates on the federal individual income tax, 1977-1986.* National Tax Journal, 43(4), 395-409; Bozdoganoglu, D. B. (2016). *Penalties For Tax Evasion Crime in Tax Law and Its Effectiveness on Preventing Underground Economy with Selected Country Examples.* In 3rd Annual International Conference on Law, Economics and Politics (p. 72).

[24] Schneider, F., & Enste, D. H. (2000). *Shadow Economies: Size, Causes, and Consequences. Journal of Economic Literature, 38*(1), 77-114.

[25] Torgler, B., & Schneider, F. (2009). *The Impact of Tax Morale and Institutional Quality on the Shadow Economy. Journal of Economic Psychology, 30*(2), 228-245.

[26] Torgler, B., & Schneider, F. (2007). *Shadow Economy, Tax Morale, Governance and Institutional Quality: A Panel Analysis.* CESifo Working Paper, No. 1923, Center for Economic Studies and ifo Institute (CESifo), Munich.

[27] Mohamed, M. (2012). *Estimating the Underground Economy from the Tax Gap: The Case of Malaysia. Malaysian Journal of Economic Studies, 49*(2), 91-109; Kiani, M., Ahmed, A., & Zaman, K. (2015). *Combining Qualitative and Quantitative Approaches for Measuring Underground Economy of Pakistan. Quality & Quantity, 49,* 295-317.

[28] Huang, H. (2020). *The Underground Economy in Transition Countries from the Perspective of Globalization: The Case of Vietnam. Amazonia Investiga, 9*(29), 234-242.

[29] Busato, F., & Chiarini, B. (2004). *Market and Underground Activities in a Two-Sector Dynamic Equilibrium Model. Economic Theory, 23,* 831-861.

Costs of the Underground Economy

Underground economic activity is associated with a number of costs to workers, consumers, businesses, and local, state, and federal governments. All of the following costs to the various players are summarized in Exhibit 3.

Misclassification of Employees

Workers misclassified as independent contractors should receive all the benefits of traditional employment but generally do not. These can include the right to an established minimum wage, overtime pay, paid sick leave, fringe benefits such as paid vacation, health insurance, or retirement, and access to state programs such as workers' compensation (WC) and unemployment insurance (UI).[30]

Additionally, misclassified employees will be burdened with paying the entirety of the 15.3% of their income due to FICA programs rather than splitting it with their employers, as in the case of properly classified employees.[31]

Both misclassified and properly classified workers' ability to collectively bargain are hampered by misclassification. The National Labor Relations Act (NLRA) protects the rights of employees to unionize and bargain collectively but specifically does not apply to independent contractors.[32] Thus, not only are misclassified employees unable to bargain collectively, but properly classified employees lose potential union members and bargaining power. In addition, misclassification makes striking employees less costly to dismiss since they can readily be replaced by a misclassified worker who cannot collectively bargain and is less costly to employ.[33]

While those businesses that misclassify employees can save substantially in labor costs, those that abide by the rules are less likely to be selected for projects because their higher labor costs translate into more expensive bids. Businesses may be forced to misclassify to stay in business. The more that an employer misclassifies or misreports their employees' incomes, the greater the advantage they will generally have over competitors. This establishes a "race to the bottom" dynamic, where businesses become increasingly egregious offenders attempting to cut costs and underbid the competition.

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[30] Many also supply employees with paid vacation time but are not required to do so. National Labor Relations Act of 1935. 29 U.S.C. §§ 151-169; Schmitt, J., Shierholz, H., Poydock, M., & Sanders, S. (2023). *The Economic Costs of Worker Misclassification.* [Fact sheet]. Economic Policy Institute; US Department of Labor, Wage and Hour Division. (n.d.). *Wages and the Fair Labor Standards Act;* Washington State Department of Labor and Industries. (2016). *Independent Contractor or Covered Worker.* Publication No. F212-250-000; Washington State Department of Labor and Industries. (n.d.). *Paid Sick Leave;* WA State Dept. Of Labor and Industries. (2016, September); Ormiston, R., Erlich, M., & Belman, D. (2021). *Payroll Fraud in New York's Construction Industry: Estimating its Prevalence, Severity and Economic Costs.* Institute for Construction Economy Research.

[31] US Social Security Administration. (2023, May). *What is FICA?* Publication No. 05-10297.

[32] National Labor Relations Act of 1935. 29 U.S.C. §§ 151-169. In June of 2023, the National Labor Relations Board voted to expand the requirements for being considered an independent contractor, potentially allowing millions of independent construction workers, rideshare drivers, and home aides to begin forming unions. Gurley, L.K. (2023, June 13). *Gig Workers Could Find It Easier to Unionize Under New Ruling.* Washington Post.

[33] Gurley (2023).

Exhibit 3

Costs of Various Underground Activities to Affected Parties for Washington State

Underground activity	Workers	Consumers	Businesses	Governments – tax revenue	Governments – social programs
Employee misclassification	**Overtime, paid leave, fringe benefits, WC and UI coverage, increased FICA costs,** minimum wage protections, collective bargaining power	—	Harder for compliant business to compete, race to the bottom	**Federal income tax (if misclassified employee fails to fully report income)**	**Federal income tax, Social Security, Medicare (if misclassified employee fails to fully report income), UI and WC premia**
Paying employees under the table	**Overtime, paid leave, fringe benefits, WC and UI coverage,** minimum wage protections, collective bargaining power	—	Harder for compliant business to compete, race to the bottom	**Federal income tax**	**Social security, Medicare, UI and WC premia**
Underreporting independent contractors	Potentially limited to only small jobs to avoid detection	—	—	**Federal income tax,** state and local B&O, retail sales, and use taxes	**Social Security and Medicare**
Unregistered independent contractors	Potentially limited to only small jobs to avoid detection	Risk financial loss if accident occurs and contractor not bonded/insured	—	Federal income tax, state and local B&O, retail sales, and use taxes	Social Security and Medicare
Underreporting businesses	—	—	Harder for compliant business to compete, race to the bottom	Federal business income, employment, and excise taxes, state and local B&O, retail sales, and use taxes	UI and WC premia (if there are non-exempt employees)

Notes:
Bolded costs signify types of cost that are included in our analyses of the size and cost of the UCE. See Section II and Appendix II for details.
UI = Unemployment insurance.
WC = Workers' compensation.

The misclassification of employees also leads to state and federal government losses. Employers not paying premiums on their misclassified employees leads to shortfalls in WC and UI funding. At the federal level, losses to federal income tax revenue and FICA occur if misclassified employees underreport their income.

Paying Employees Under the Table

The costs associated with paying employees under the table are very similar to those from the misclassification of employees. However, unlike misclassified employees, individuals paid under the table will likely avoid paying FICA contributions and federal income tax.

Compliant businesses will be affected by employees being paid under the table, similar to misclassification, losing competitiveness to those businesses that cheat. The same losses to UI, WC, federal income tax, and FICA programs also occur.

Unregistered or Underreporting Contractors

It is hard to make a definitive statement about whether independent contractors in the UCE are better or worse off than legally operating independent contractors in terms of compensation. On the one hand, by underreporting their income, independent contractors in the UCE take home more of their gross income by not paying as much federal income tax and FICA contributions compared to their fully reporting counterparts. On the other hand, the jobs they can accept may be limited by their need to remain undetected, smaller in scale, and less favorable in pay. Unregistered contractors also go without some of the legal protections afforded by registration.[34]

Consumers are put at risk by hiring unregistered contractors. Properly registered contractors are insured and bonded to protect consumers. For instance, if a contractor leaves before finishing a job or does not follow the contract, the consumer who hired them can file suit on their bond. A contractor's insurance will compensate the consumer if an accident occurs on the job that damages their property. Without registration, consumers are less able to hold their contractors accountable and recoup any property damaged during work.[35]

Non-compliant contractors cause tax losses to local governments, the state, and the federal government.[36]

[34] In the 2023 case *Dobson vs. Archibald*, the Washington Supreme Court found that a homeowner was not liable to pay a contractor who was unregistered. Thus, independent contractors that are not registered risk potential non-payment for a job. Dobson vs. Archibald. No. 100862-7 Washington State. 2023.

[35] WA State Dept. of Labor and Industries (n.d.). *Problems With a Contractor.*

[36] Washington State Department of Revenue. (n.d.). *State Tax Overview;* Ormiston, R., Belman, D., & Erlich, M. (2020). *An Empirical Methodology to Estimate the Incidence and Cost of Payroll Fraud in the Construction Industry.* Institute for Construction Economics Research; Washington State Department of Revenue. (2022). *Local Sales and Use Tax.*

Underreporting Businesses

Similarly to underreporting contractors, businesses that underreport can avoid paying local, state, and federal taxes.[37] These businesses may also not pay into WC and UI programs and may exhibit the "race to the bottom" dynamics.

The Impact of Tax Losses

Tax losses at every governmental level have societal impacts. The revenue from taxes is used to finance public projects and programs that potentially benefit members of the public, businesses, and the environment. Tax losses can cause these projects and programs to be cut from budgets due to lack of funding, causing society to forgo their benefits.[38] Even when programs are not cut, those who pay into the system pay higher rates than would be required if everyone paid what they owed. In this way, law-abiding workers and businesses effectively subsidize policy benefits for those who evade taxation.[39] Thus, the losses to local, state, and federal tax programs have impacts beyond lost revenue.

[37] US Internal Revenue Survey. (2023). *Business Taxes.*

[38] Sarin, N. (2021). *The Case for a Robust Attack on the Tax Gap.* US Department of the Treasury.

[39] Xu & Erlich (2019).

II. Size & Cost of Washington's UCE

This section overviews our methodology and results for estimating the size and cost of the underground construction economy (UCE) employment in Washington State from 2011 to 2021. We account for costs resulting from misclassifying employees and underreporting income amongst independent contractors (or, more simply, payroll fraud). These correspond to the bolded cells of Exhibit 3. We are unable to account for unregistered businesses and contractors. We define a construction worker as any individual classified as NAICS 23 by the Census Bureau and Bureau of Labor Statistics (BLS).[40] Our methodology draws on other methodologies used in the literature but innovates substantially upon them. Additional details on the methodology and complete results are available in the Appendix II.

Size Estimation

Data and Methods

Our entire methodology for our size estimates is summarized in Exhibit 4. We employ a two-step method to estimate the size of Washington's UCE.[41] First, we estimate the number of misclassified employees. Second, we estimate the number of independent contractors who underreport their income.

Adding together our estimates of misclassified employees and underreporting independent contractors gives us our estimate for the size of the UCE in Washington. We produce low, middle, and high estimates for the size of the UCE in all years.

We combine a variety of publicly available datasets to estimate the size of Washington's UCE. We use data from the American Community Survey (ACS) and the Current Population Survey (CPS), both from the US Census Bureau (Census), to estimate the total number of construction workers and the total number of construction workers employed by construction businesses (wage and salary employment).[42] These large-scale surveys ask US residents various demographic and economic questions about their work. To estimate employment reported to authorities, we use data from the Quarterly Census of Employment and Wages (QCEW), a collection of state-level payroll reporting data published by the BLS.[43]

[40] It should be noted that there are construction occupations outside of the construction industry. For instance, a given individual could perform construction services for an agricultural employer (e.g., building fences or barns); their industry would be NAICS 11 (Agriculture) in this instance. Individuals in construction occupations outside NAICS 23 will not be accounted for in our analysis. Technically, these workers are not in the construction industry, and hence outside the scope of this study.

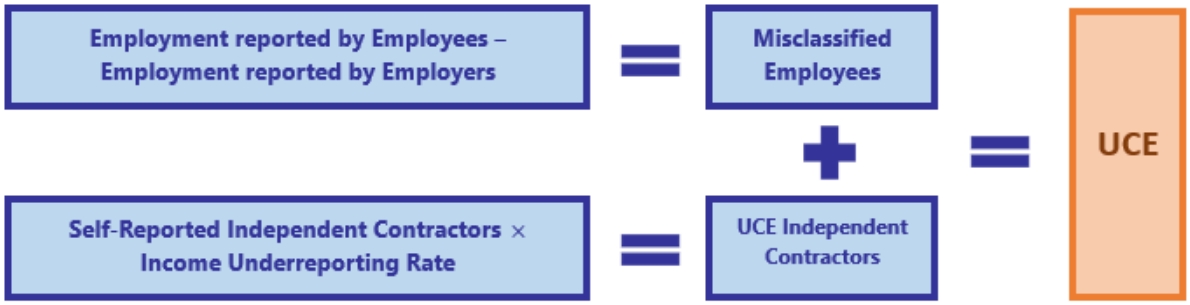
[41] Our methodology is adapted from Ormiston et al. (2020).

[42] US Census Bureau. (2011-2021). *Industry by Class of Worker for the Civilian Employed Population 16 Years and Over* [C24070, ACS 1-year estimates) [Data set]. Washington, DC; Ruggles, St., Flood, S., Goeken, R., Grover, J., Meyer, E., Pacas, J., & Sobek, M.. IPUMS USA: Version 12.0 [Data set]. Minneapolis, MN: IPUMS, 2022; US Census Bureau. (Jan. 2011 – Dec. 2021). *Current Population Survey* [access via Microdata Access Tool].

[43] US Bureau of Labor Statistics. (2023). *Quarterly Census of Employment and Wages* [Data set].

Exhibit 4

Simplified Size Estimation Methodology



Note:
Some methodological steps, such as adjusting for net migration, part-time workers, and second jobs, are omitted for ease of exposition. See Appendix II for details.

Our estimates of the number of misclassified workers come from the difference between the ACS wage and salary employment data in the construction industry (employee self-reported survey data) and QCEW construction employment data (employer payroll data). Since the ACS only asks about workers' primary jobs, we inflate these ACS estimates to account for workers' second jobs in construction using the CPS data. Using the ACS data, we also account for cross-border commuting of workers to and from neighboring states. Since self-reported data is typically measured with error, we use the standard deviation of these ACS estimates to generate high and low estimates of the number of individuals self-reporting work in the construction industry.[44] Subtracting the QCEW estimates from these ACS estimates produces our low, middle, and high estimates of misclassified workers.

Next, we estimate the number of independent contractors underreporting their activity to authorities. We determine the total number of independent contractors in the state construction industry by subtracting ACS estimates of wage and salary employees from ACS estimates of total employment.[45] To estimate how many of these independent contractors are underreporting their income, we multiply our estimate of total independent contractors by a series of income underreporting rates found in the literature. Our low estimates are generated using an income underreporting rate of 23.3%, our high estimates use a rate of 64%, and our middle estimates use the average of these two rates (43.65%).[46]

[44] Our high estimate is the ACS estimate plus one standard deviation, and our low estimate is the estimate minus one standard deviation.

[45] We again account for cross-state commuters.

[46] Alm, J., & Erard, B. (2016). *Using public information to estimate self-employment earnings of informal suppliers. Public Budgeting & Finance, 36*(1), 22-46; Internal Revenue Service (2016).

Finally, we combine our misclassification and underreporting independent contractor estimates to produce estimates of the size of the UCE. To do this, we first convert both estimates into full-time equivalent (FTE) units by multiplying each by the average FTE worked by construction workers in Washington. We do this to account for part-time workers who may be in the UCE (see Appendix II for details). Our final size estimates add our FTE estimates of misclassified employees and underreporting independent contractors.

Size Results

Our estimate of the size of Washington's UCE is reported in Exhibit 5. From 2011 – 2021, our average low estimate of the UCE in Washington was 17,869 FTE workers per year. For our middle estimates, the average was 32,018 FTE workers per year. Our high estimates place the size of the UCE at an average of 46,212 FTE workers per year. For our low, middle, and high estimates, 2011 was the year with the largest estimated UCE size, and 2016 was the smallest.

These estimates provide the size of the UCE in Washington in terms of full-time equivalent workers not reporting their work at all. They are not headcounts of those underreporting any activity. So, in 2021, for instance, our middle estimate states that the equivalent of 33,843 full-time workers are not reporting their work. However, it could actually be that 60,000 workers are underreporting some, but not all, of their work. Our estimate says that if you took all the misreporting by all workers, it would be the same amount of UCE activity as if 33,843 workers completely avoided reporting their activity. Thus, our estimates are in units of "FTE."

Comparing our estimates to the total population of construction workers in Washington (reported by the ACS) gives a sense of the pervasiveness of underground employment. Between 2011 and 2021, our middle estimates of the UCE range from 10.7% – 24.1% of total construction employment in the state, with an average of 14.2%.[47] Our middle estimates of the share of misclassified workers out of total construction workers in the state range from 1.6% - 15.0%, with an average of 5.3%. These numbers put Washington at the bottom of the range of estimated misclassified rates from other states (see

[47] Note that these percentages are generated from our UCE estimates which give the minimum number of workers underreporting their activity by combining all underreporting into FTE units. The true percent of workers underreporting income may be greater as discussed above.

Exhibit 5

Size Estimates of the Underground Construction Economy in FTE (2011-2021)

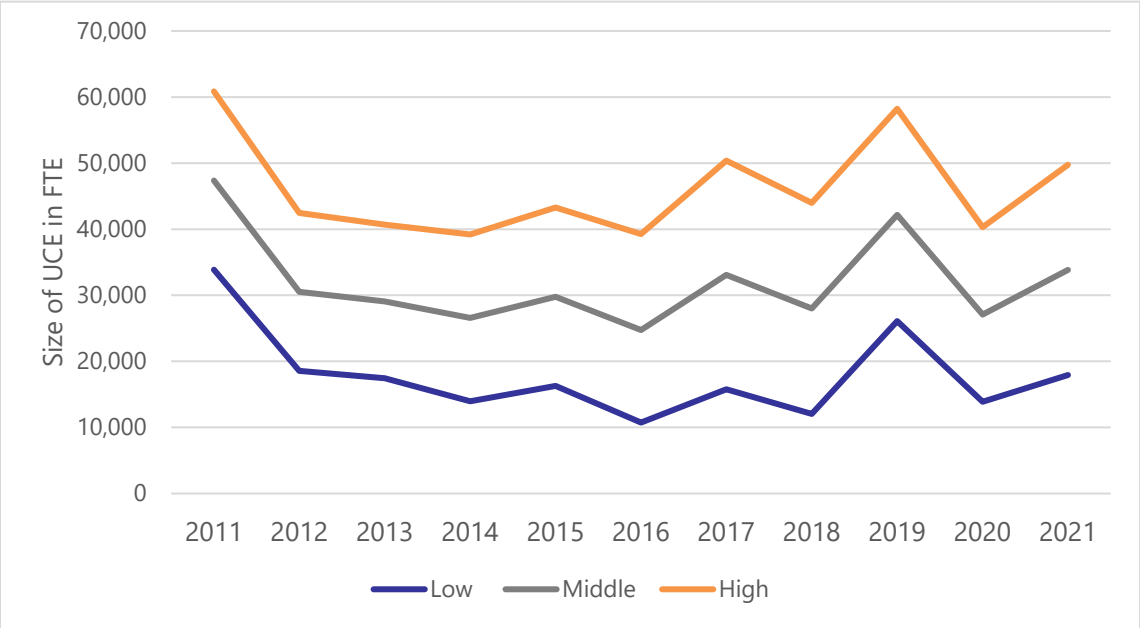


Exhibit A1 in Appendix I for a comparison of state misclassification rate studies).

Discussion and Limitations of Size Estimates

Our estimates of the size of Washington's UCE employment represent our best efforts to capture all illegal employment relationships in the state's construction sector. However, there is a great deal of uncertainty in these estimates. The wide difference between our low and high estimates demonstrates this uncertainty. These ranges are not generated by standard statistical procedure and should not be interpreted as confidence intervals.[48] Our estimates of misclassified employees deserve additional caution.

In 2016, our low estimate of the number of misclassified employees was not significantly different than 0, meaning that we cannot confidently state that there were *any* misclassified employees in Washington that year. In reality, at least some employees were certainly misclassified in these years, as audits by L&I and ESD routinely find dozens or hundreds of misclassified construction employees each year. Unfortunately, the data is not precise enough to accurately identify all misclassified employees.

[48] As detailed in Appendix II, these estimates are generated by adding and subtracting a single standard error from the ACS to the middle-misclassified estimates rather than the standard 1.96 standard errors used to generate a 95% confidence interval. Hence, these ranges are smaller than a standard confidence interval.

There are reasons to suspect that our size estimates are underestimates. Our methodology assumes that UCE workers respond to surveys like the ACS and CPS at the same rates as legal construction workers. In reality, UCE workers are probably less likely to respond to these surveys for fear that their answers could somehow be traced back to them, leading to punishment for operating underground.[49] As a result, we would expect our ACS estimates of employment to be undercounts of the true numbers of construction workers in Washington. Since the QCEW numbers are based on payroll (and hence immune to this particular issue), this would cause our estimates of misclassified employees and UCE independent contractors to be too low.

It should also be noted that our estimates of the size of UCE only include misclassified employees and underreporting independent contrators. An important component of the UCE left out in these estimates is the number of businesses and independent contractors avoiding registration and taxation. This includes businesses and independent contractors flying under-the-radar as well as businesses underreporting their economic activity in construction. Without a similar comparison of registered to self-reported businesses and independent contractors, we cannot determine the scope of their roles in Washington's UCE. These businesses and contractors forgo paying taxes such as excise and use taxes and either withhold or do not collect retail sales tax.

It is possible, however, that some of their "employees" could show up in the ACS and CPS, meaning that we may have captured some of these businesses' impacts on the state.

Cost Estimation

Methodology and Data

With estimates of the *size* of Washington's underground construction economy (UCE), we can now estimate its *cost* to taxpayers and state and federal programs. To do this, we estimate costs on a per-worker basis and then multiply those costs by the estimated number of workers in the UCE to get the total costs of these forms of UCE activity. We will start by estimating the cost of legally employing a worker compared to employing a worker who is either misclassified or paid under the table. This will allow us to estimate the savings to an employer associated with hiring employees in the underground economy.

We start with the average salary/wage of construction workers in Washington for each year in the study (2011-2021). Annual estimates range from a low of $43,002 in 2013 to a high of $64,611 in 2020.[50] Lacking data on wages in the underground economy, we assume that all construction workers receive the same base wage.[51]

[49] It should be noted, however, that it is not possible to trace responses from these surveys back to individual respondents.
[50] Stephen Ruggles et al. (2023).
[51] As noted in Ormiston, Belman, and Erlich (2020), it is likely that UCE workers are paid substantially less than legal workers. See the discussion of our cost results for a treatment of how this would affect our per worker and total costs.

In addition to wages, we account for each of the following in our analysis:[52]

- Overtime and paid Leave,
- Healthcare and retirement plans (fringe benefits),
- Unemployment insurance,
- Workers' compensation,
- Medicare and Social Security (FICA), and
- Federal income taxes

At the federal level, we generate high and low estimates of the losses from misclassified employees to FICA and income tax revenue by assuming they underreport at the same income rates as we used to estimate the number of FTE-equivalent UCE independent contractors, 23.3% and 64% (with an average of 43.65%). For more details on how we calculate costs due to each of these factors, see Appendix II.

We calculate total losses to workers, Washington State, and the federal government by calculating per-worker losses to each party by the affected number of workers. Total losses to workers are calculated as per-worker overtime, paid leave, and fringe benefit estimates multiplied by our estimates of the number of misclassified employees.[53] At the state level, total losses are given by employers' per-worker UI and WC premiums multiplied by our estimates of the number of misclassified employees.

At the federal level, total losses from the UCE arise from non-payment of FICA obligations and federal income tax. Losses to FICA are calculated differently for UCE independent contractors and misclassified employees. Since our estimates of UCE independent contractors are in units of FTE employees not reporting any income, we need only multiply the per-worker legal independent contractor estimates of dues to these programs by our size estimates from the previous subsection. For misclassified employees, our size estimates are a headcount, meaning we still need to estimate the degree to which these workers underreport their income. For the low, middle, and high estimates, we assume that they misreport their income at the same rates as independent contractors, or 23.3%, 43.65%, and 64%, respectively. For federal income tax losses, we assume that all misclassified workers and independent contractors in the state misreport by 23.3%, 43.65%, and 64%, respectively. While this is a different assumption than we make elsewhere in our cost analysis, it allows us to generate ballpark estimates of federal tax losses despite limited information.[54]

[52] Again, our methodology for the cost of the UCE is based on Ormiston, Belman, and Erlich (2020). Details on how we account for each cost/benefit can be found in Appendix II.
[53] Independent contractors generally do not receive these benefits and so they do not constitute a loss due to the UCE.

[54] We make this assumption because of the difficulty of estimating income tax losses without knowing more about what share of workers are misreporting any income. Our literature search was not able to find such information. See Appendix II for details.

Exhibit 6

Per-Worker Values/Costs to Workers, Employers, and Social Insurance for Legal and UCE Construction Workers (Example year 2021)

	Legal		Underground	
	Employee	Independent contractor	Misclassified employee	UCE Ind. contractor
Value to worker				
Base wage	$56,993	$56,993	$56,993	$56,993
Overtime/leave	$6,674	$0	$0	$0
Fringe benefits	$10,267	$0	$0	$0
Federal income tax	($4,341)	($3,540)	($752)	$0
FICA (worker)	($4,870)	($10,291)	($4,914)	$0
Worker after-tax pay	**$64,723**	**$43,162**	**$51,327**	**$56,993**
Costs to employer				
Base wage	($56,993)	($56,993)	($56,993)	($56,993)
Overtime/leave	($6,674)	$0	$0	$0
Fringe benefits	($10,267)	$0	$0	$0
FICA (employer)	($4,870)	$0	$0	$0
UI	($1,401)	$0	$0	$0
WC	($3,168)	$0	$0	$0
Total labor costs	**($83,373)**	**($56,993)**	**($56,993)**	**($56,993)**
Social insurance				
FICA (worker)	$4,870	$10,291	$4,914	$0
FICA (employer)	$4,870	$0	$0	$0
UI	$1,401	$0	$0	$0
WC	$3,168	$0	$0	$0
Total value to soc. ins.	**$14,309**	**$10,291**	**$4,914**	**$0**

Notes:

Numbers in red denote costs to workers or employers.

The Misclassified Employee column is constructed assuming that those workers underreport their income by 43.65%, the average of our selected income underreporting rates. Following our assumptions from the size estimates section, we assume that UCE independent contractors do not report any income.

UI = Unemployment insurance.

WC = Workers' compensation.

Cost Results

Exhibit 6 presents the 2021 per-worker costs to employees and employers and the costs to social insurance and the tax system. The first two columns pertain to legal employees and independent contractors. The third and fourth show the same information for underground construction workers, whether misclassified or operating illegally as an independent contractor. For this table, we assume that misclassified employees underreport their income by 43.65% (our middle estimate of income underreporting); therefore, the taxes paid are based on that underreported income. Since our size estimates for UCE independent contractors are in terms of FTE-equivalent workers not reporting their income, the UCE independent contractor column assumes that those workers report none of their income.[55]

Comparing total labor costs for misclassified employees to costs for legal employees shows that construction employers who misclassified their employees in 2021 saved an estimated $26,380 per employee (31.6%), the same as using an independent contractor. Employers who pursued this employment relationship not only avoided paying overtime, leave, and fringe benefits totaling $16,941 but also avoided social insurance payments totaling $9,439 per worker. Additional details, including corresponding values for the years 2011-2020, can be found in Appendix II.

Comparing the independent contractor and UCE columns in Exhibit 6 reveals the incentive for independent contractors to underreport their income. Legal independent contractors had a take-home value of $43,162, and misclassified employees had a take-home value of $51,327. Independent contractors who did not report their income in 2021, by contrast, took home the full value of their annual salary, or about 34% and 12% more than legal independent contractors and misclassified employees, respectively.

We now calculate total losses to workers and state and federal programs from Washington's UCE. Our results for 2021 are displayed in Exhibit 7. In total, between 2011 and 2021, we estimate that misclassified employees missed out on $142.6 million on average per year in benefits and wages that their employers would have paid them had they been properly classified (our middle estimate). Since retirement benefits generally accrue interest over time, the total losses of a misclassified worker in terms of retirement benefits over the course of their lifetime almost certainly exceed our estimates.

[55] It should be noted that some misclassified employees could hypothetically not report any income at all. In this case, their costs and benefits would look identical to the UCE Independent Contractor column.

Exhibit 7

Total Costs to Worker, State, and Federal Programs from Washington UCE
(In Thousands, Example Year 2021)

	Low estimate	Middle estimate	High estimate
Worker			
Overtime/leave	$40,780	$77,840	$114,902
Insurance	$36,996	$70,618	$104,241
Retirement	$25,744	$49,140	$72,537
Worker total	**$103,519**	**$197,599**	**$291,679**
State			
UI	$9,565	$18,257	$26,950
WC	$21,626	$41,279	$60,933
State total	**$31,190**	**$59,536**	**$87,883**
Federal			
Social Security	$91,068	$191,989	$312,844
Medicare	$21,298	$44,901	$73,165
Federal income tax	$79,532	$140,013	$179,242
Federal total	**$191,899**	**$370,903**	**$565,251**

Notes:
Estimates may not add up to totals due to rounding.
UI = Unemployment insurance.
WC = Workers' compensation.

At the state level, our average middle estimate of UI and WC premiums not paid by the employers of misclassified employees was $59.8 million per year between 2011 and 2021. Note that WC costs to employers are higher per worker than UI costs, meaning that losses to the WC program make up the majority of these losses. As we will address in the discussion section, these results are likely underestimates. Our average middle estimate of total federal losses was $315.4 million per year in lost federal income tax and FICA contributions.

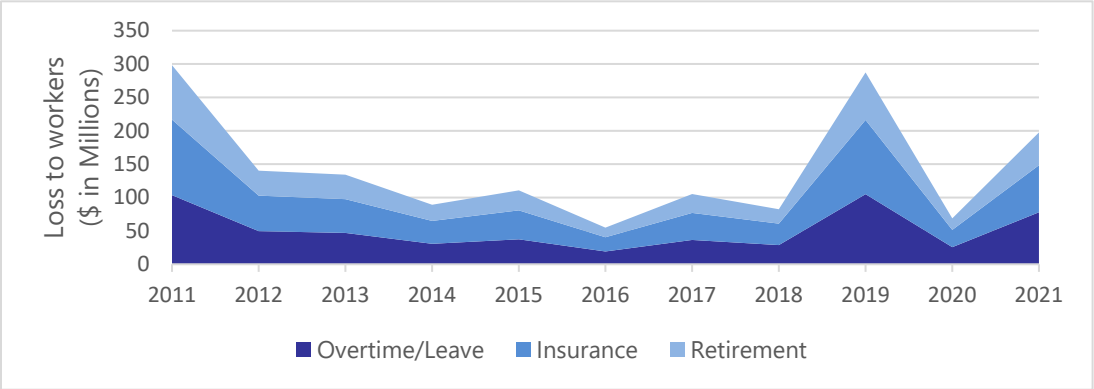
Exhibit 8 presents the total costs to workers and state and federal programs over time for the middle estimates of the size and cost of the UCE. It should be noted that estimates of the number of misclassified individuals were highest in 2011 and 2019, driving the two dominant peaks in each graph. Past research has shown that the estimated size of the underground economy tends to grow during recessions as individuals look to find income quickly following job losses.[56] The Great Recession of 2007 – 2008 may explain the misclassification increase in 2011 as the economy returned to steady growth.

[56] Hoang (2020) and Busato & Chiarini (2004).

Exhibit 8

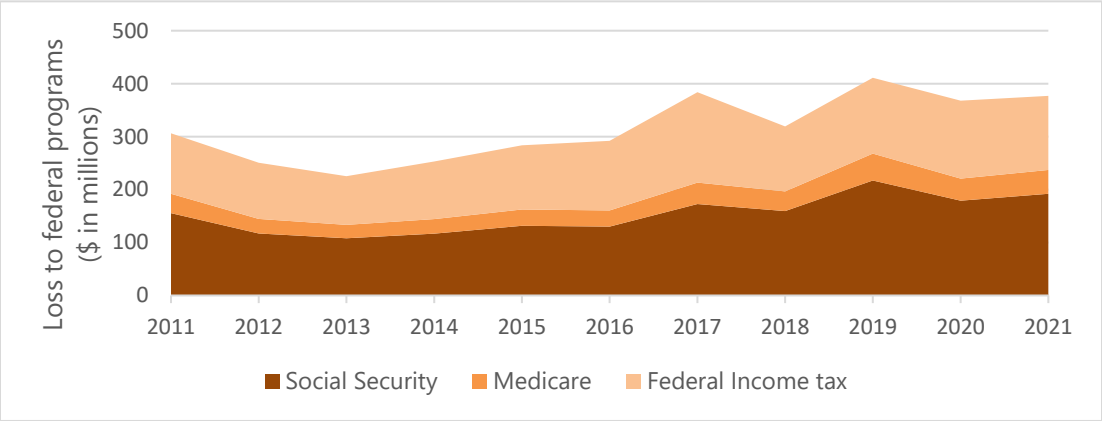
Total Costs to Workers and State and Federal Programs from Washington UCE by Category, (In Millions, Middle Estimates 2011-2021)

(a) Total Costs to Workers



(b) State-Level Total Costs

(c) Federal-Level Total Costs



Discussion of Cost Results and Limitations

A comparison of our cost estimates to others in the literature is difficult to make because our methodology, while built on existing methodologies, is different in a number of significant ways. Washington differs from previously studied states regarding population, demographics, and policies.[57]

Like our size estimates, our cost estimates should be considered relatively uncertain. For each total cost calculated in Exhibit 7, the range between our low and high estimates is substantially larger than our low estimate. This is partially due to the wide range of income underreporting rates we found in previous research (23.3% and 64%). The wide ranges in state and worker costs are also partially driven by how we produced low and high estimates of misclassified workers (see Appendix II for details).

It should be noted, however, that these factors reflect actual uncertainty in the underlying data. The underreporting rates themselves are different estimates of the extent to which self-employed workers lie about their income. The misclassified estimates are partly generated by measures of uncertainty in the ACS data. Thus, while we present wide ranges for our cost estimates, those ranges ultimately reflect the difficulty of precisely measuring illegal economic activity.

There are some reasons to suspect that our estimates may be too high. First, misclassified employees and independent contractors in the UCE are likely paid substantially less base wage than their legally working counterparts.[58] Lacking data on workers in the underground economy, we assume they follow the same demographic and economic trends as the legal workers we can observe in datasets like the ACS and CPS. This includes assuming that UCE workers make the same base wage as legal workers. If UCE workers are paid less than legal workers in base wage, then our per-worker estimates of total after-tax pay for UCE workers will be too high.

Additionally, we cannot definitively state how our total worker and state losses would be affected without knowing what base wage misclassified employees and UCE independent contractors would be paid if they were properly classified and fully reporting. Our estimates will be overestimates if UCE workers are paid the same base wage after coming into compliance.

[57] Each state generally has its own procedure for setting the premiums for WC and UI, for instance. Each state also has its own set of underground economy policies that may lead to different amounts and kinds of underground activity.

[58] Ormiston et al. (2020) and Ormiston et al. (2021).

Other assumptions likely lead our estimates to be too low. Firstly, as previously detailed, our size estimates are likely underestimates themselves, meaning that even if per-worker costs are unbiased, total costs will be underestimated. Secondly, we made several conservative assumptions about per-worker costs, including that construction workers' spouses make no income and misclassified employees still report some of their income. If these assumptions are violated, our per-worker and total cost estimates will be too low. As noted previously, our estimates do not include losses from underground businesses that fail to pay taxes such as excise, use, and B&O tax, and hence only represent losses from underground employment.

Finally, other losses are more social in nature and, therefore, difficult to measure. These could include the impact on consumers of hiring an unlicensed contractor, the erosion of public trust, or the labor power of workers. The inclusion of all of these losses would likely increase our estimates of the cost of the UCE substantially, though it is not possible to say by how much.

III. Enforcement in Washington

Within Washington, three state-level agencies focus on the detection of underground economic activity and the enforcement of proper reporting standards: the Department of Labor and Industries (L&I), the Employment Security Department (ESD), and the Department of Revenue (DOR). Each agency has similar programs and services related to the underground economy, such as audits and compliance education, but with different focuses determined by the agencies' responsibilities within the state. Additionally, the Attorney General's Office (AGO) provides legal representation to each agency as needed and also conducts criminal investigations in cases of company-wide underground economy practices.

In this section, we describe the actions taken by each agency and detail past and present collaboration between the agencies and other governmental and private organizations in the state. To gather information for this section, we referred to websites and documentation produced by each agency and spoke with relevant agency employees, which we summarized here. Each agency's UCE-related activities are summarized in Exhibit 9. State government sources for each agency can be found in Exhibit A5 in Appendix III.

State Agency Enforcement Operations

Department of Labor and Industries

The Department of Labor and Industries oversees Washington workers' health, safety, and security. They set and enforce workplace safety standards, provide medical and financial assistance to workers, enforce wage and hour laws, and protect the public from unsafe work. They conduct audits and outreach to ensure compliance with the law. L&I has the power to audit any business whose employees are covered by workers' compensation (WC) and tends to focus its efforts on high-injury rate industries such as construction. The goal of these audits is to determine whether businesses (or often general contractors) are registered and accurately report the wages earned and hours worked by their employees (if there are any).

L&I finds out about possible violations of registration and reporting requirements via tips from the public and referrals from other state agencies. L&I auditors also regularly patrol their communities and local worksites, looking for unregistered businesses with visible or reported activity. Workers' compensation claims can also trigger audits if the businesses the claimant works for are unregistered or misclassifying/not reporting that employee. A new program within L&I, the Proactive Investigation and Enforcement Unit, seeks to utilize data from historical complaints, investigation resolutions, and external sources to detect major fraud violations. Finally, a limited number of audits at L&I are done on businesses selected at random.

L&I especially focuses on finding and registering unregistered businesses and contractors within the construction industry. During audits, L&I auditors also check that a business' employees' hours and wages or independent contractors' incomes are being properly reported. In fiscal year 2021, L&I audited 550 unregistered businesses and contractors and assessed nearly $11 million in premiums and penalties. Construction businesses comprised 65% of those owing premiums and/or penalties. Some fraud cases are referred to the state AGO for further prosecution.

L&I also regularly conducts workshops on registration for contractors to increase awareness of reporting standards. These include Contractor Training Days at community colleges across the state, featuring a selection of classes on safety, best practices for WC costs, public works contracts, risk management, and other relevant topics. Several handbooks on reporting compliance are also published by L&I.

Employment Security Department

The Employment Security Department is Washington's main employment authority and the administrator of the state's unemployment insurance (UI) system. Similarly to L&I, ESD's activities around the underground economy include auditing, outreach, and education. However, ESD's enforcement activities focus on businesses in industries that have historically high rates of non-compliance with wage and hour reporting requirements.

Being the overseer of the state UI system, ESD is required by the US Department of Labor (USDOL) to conduct compliance audits annually. ESD initiates audits in several ways. First, any employer who transfers ownership or reclassifies their business type is audited. ESD also receives tips about fraud from the public via an online portal and toll-free hotline. Auditors at ESD will sometimes discover misreporting and fraud by analyzing inconsistencies in employment data from different industries. Finally, about 10% of audits at ESD are of businesses randomly drawn from a computer database.[59]

ESD conducts two main types of audits. In performance audits, which make up the majority of audits, auditors look for general violations of wage and hour reporting, proper employee classification, and Washington's predecessor/successor laws in the State Unemployment Tax Act that govern how tax liabilities are handed off between changing owners. In FY 2021, ESD conducted a total of 1,003 such audits. The second type of audits, underground economy audits, focus on finding employees misclassified as independent contractors. In FY 2021, ESD conducted a total of 59 underground economy audits and found roughly 16.5 misclassified employees per audit across all industries. Those found to be non-compliant are audited more frequently and sometimes put on a follow-up plan to come into compliance.

[59] Christmas, C., (former) ESD. (personal communication, January 18, 2023).

Several efforts exist at ESD to help improve voluntary compliance. ESD provides the option of making quarterly unemployment tax reports online. About 95% of employers file online. Voluntary audits are also offered for businesses who wish to check if they are compliant. When violations are found, penalties and sometimes even accrued interest on past violations are eligible to be eliminated. In the interest of preventing fraud, ESD regularly conducts education and outreach operations to inform the public and business owners of reporting requirements.

Department of Revenue

The Department of Revenue (DOR) is Washington's main tax agency, overseeing the majority of taxes collected from businesses and individuals in the state. DOR can audit any business in the state, regardless of whether they contribute to certain programs or have any employees.

DOR discovers underground activity in a number of ways. The department receives tips from the public through its online Suspect Fraud portal and a toll-free hotline. Some tips come from other state agencies, such as L&I, ESD, and AGO. Additionally, DOR continuously conducts audits of registered businesses, both at random and targeted at businesses that have previously been found non-compliant. DOR's Tax Discovery program (described below) also uncovers a large number of unregistered businesses every year.

The Audit Division at DOR audits businesses to ensure compliance with state excise tax obligations. These include B&O, retail sales, use, and public utility taxes. Those businesses found in non-compliance are required to pay back all tax owed, accumulated interest since the time of the violation, and penalties of up to 39% of the tax owed. In FY 2021, DOR collected nearly $30 million from over 260 businesses through standard audits.

The Tax Discovery program focuses on registering in- or out-of-state businesses with a significant presence in Washington. Agents first establish that a given non-compliant business has a significant presence within Washington.[60] They then issue a mandatory questionnaire to determine if the business needs to register and help the business to comply if so. In FY 2021, the Tax Discovery program registered 360 businesses and collected $63 million in owed taxes, interest, and penalties.[61]

DOR also has a Voluntary Disclosure Program, which allows unregistered businesses to request an audit of their operations to become compliant. Businesses violating reporting requirements will still be required to pay back tax obligations with interest; penalties associated with non-compliance may be waived in part or full. To be eligible, a business must never have registered or reported taxes to DOR nor ever have been contacted by DOR for enforcement purposes.

[60] Establishing a significant presence in Washington means proving that a business has a physical or economic "nexus" (e.g., employs Washingtonians, owning property or holding inventory) in Washington or makes sales to Washington consumers ("marketplace fairness").

[61] Some of this $63 million was from assessments in prior years.

Exhibit 9

Washington State Agency UCE Detection and Enforcement Actions

Agency	Focus	Detection	Audits	Education and outreach
Department of Labor and Industries	Industries with high injury rates, registering contractors	• Tips from public, businesses • Auditors on patrol • WC claims if employer not reporting • Proactive Investigation and Enforcement Unit • Random audit selection	• Registering unregistered contractors • General hours and income reporting	• Workshops on reporting requirements and working with L&I, including Contractor Training Days • Compliance handbooks
Employment Security Department	Industries with historically high rates of non-compliance	• Tips from public, businesses • Employer transfers of ownership • Reporting inconsistencies between records • Random audit selection	• Performance audits for general violations of reporting • Underground economy audits for misclassified or unreported workers	• Online filing • Voluntary audits with reduced penalties • Workshops on reporting requirements and working with ESD
Department of Revenue	All industries, registering businesses	• Tips from public, businesses, Suspect Fraud portal • Tax Discovery	• Focus on compliance with state excise taxes (B&O, retail sales, use, public utility)	• Workshops on reporting requirements, including industry-specific requirements • Voluntary audits for unregistered businesses • Compliance studies
Office of the Attorney General	Businesses with audit appeals or widespread patterns of abuse	• Referrals from other agencies • Independent investigations	• Represent L&I, ESD, DOR during appeals process • Conducts legal investigation of cases similarly to audits	• Rulemaking advising to agencies • Meetings with other states' AGOs, USDOL

DOR also focuses on business owner education as a way to prevent tax fraud and underground activity. The department holds regular tax workshops to inform businesses of their tax reporting responsibilities in Washington. Additional workshops cover industry-specific tax reporting responsibilities, including classifications, deductions, sales tax collection, and record-keeping requirements. Every few years, DOR releases new installments to its Compliance Study series, a review of unreported sales, use, business and occupation, public utility, and other taxes by registered tax-paying businesses within a calendar year.

Attorney General's Office

The AGO is also important in holding misclassifying and misreporting employers accountable. First, the AGO may represent L&I, ESD, and DOR in if cited employers or independent contractors appeal the penalties for underground activity assessed by each agency against them.[62] For each such appeal, the AGO typically begins building its case against the violator in a process similar to an audit. If an appeal is anticipated, the AGO may also work with each agency to develop a case beforehand.[63] While bringing a case, the AGO provides legal advice to the assessing agency.

The AGO also gets involved immediately with cases in which a contractor is not properly licensed and bonded on the behalf of L&I (the enforcing agency for contractor registration).[64]

Second, less frequently, the AGO will start a criminal case against a company with a widespread pattern of payroll fraud. Criminal cases are much more serious because systematic violators usually know they are operating illegally, resulting in larger penalties.[65]

AGO attorneys regularly advise on rule-making activities at L&I, ESD, and DOR.[66] When relevant, the AGO will provide tips and referrals about reporting requirements violators to each of these agencies. Members of the Washington AGO also meet monthly with representatives from other states' attorneys general to discuss emerging fraud schemes and particularly problematic companies that span multiple states. Finally, the AGO maintains a good working relationship with the US Department of Labor.[67]

[62] In the case of ESD, the AGO only gets involved in significant administrative litigation matters, involving novel questions, large sums, or cases with broad impact. ESD's Legal Appeals Unit handles many appeals against agency decisions. Peterson, E., Sr. Assistant Attorney General, AGO. (personal communication, September 18,, 2023).

[63] Peterson, E., Sr. Assistant Attorney General, AGO. (personal communication, May 18, 2023).

[64] Eason, A., Management Analyst, DOR (personal communication, May 25, 2023).

[65] Goss, A., Senior Counsel, AGO. (personal communication, May 4, 2023).

[66] Peterson, E., Sr. Assistant Attorney General, AGO. (personal communication, May 18, 2023).

[67] Goss, A., Senior Counsel, AGO. (personal communication, May 4, 2023).

Collaboration Between Agencies

A major effort towards collaboration between agencies began with the creation of the Joint Legislative Task Force on the Underground Economy in the Washington State Construction Industry (Task Force) by the 2007 state legislature. Its purpose was to recommend policies to improve "cohesion and transparency" between state agencies to increase oversight and regulation of the underground economy in the state. The Task Force comprised the chair and ranking minority members of the Senate Labor, Commerce, Research, and Development Committee and the House of Representatives Commerce and Labor Committee, four members representing the construction business, and four members representing construction labor organizations. A non-voting liaison from each department represented L&I, ESD, and DOR. The Task Force was required to contract with WSIPP for help assessing the size and costs to the state and workers of the UCE.[68]

The Task Force was eventually renamed the Joint Legislative Task Force on the Underground Economy, dropping the specificity of the construction industry.

The Task Force made a number of legislative recommendations for the state related to enhancing the power of state agencies to combat the underground economy. See Exhibit 10 for a catalog of bills introduced and passed due to the committee's work.

After the formal conclusion of the Task Force, some members of the effort continued to meet informally as a workgroup. This workgroup eventually became the Construction Underground Economy Advisory Committee (CUEAC), which has continued to meet semi-annually. Like the Task Force, the group comprises representatives of business, labor, and consumers in construction and representatives of L&I, ESD, and DOR. CUEAC members focus on generating new ideas to help combat the prevalence of the UCE and improve information sharing.[69]

Exhibit 10

Bills Passed Following Recommendations of
Joint Legislative Task Force on the Underground Economy

Bill	Year	Description
ESHB 3122	2008	Provided an explicit definition of an independent contractor
2SSB 6732	2008	Provided additional regulatory power to L&I for the underground economy
SHB 1555	2009	Modified the rules of the task force, extended through end of 2009
SSB 5904	2009	Defined independent contractors in the context of prevailing wages
SSB 5613	2009	Empowered L&I to give stop work orders for some violations of WC provisions

Notes:
Sources: Joint Legislative Task Force on the Underground Economy in the Washington State Construction Industry. (2008). *Findings and Recommendations.*; Joint Legislative Task Force on the Underground Economy in the Washington State Construction Industry. (2009). *Final Report.;* Joint Legislative Task Force on the Underground Economy. (2010). *Final Report.*

[68] Construction – Underground Economy – Task Force, SB 5926, 60th Legislature (2007).

[69] WA State Depts. of Labor and Industries, Revenue, and Employment Security (2022).

Our outreach efforts indicate that the committee has been especially valuable as a forum for members of the business community and labor organizations to speak directly with government workers responsible for enforcement, sharing questions and concerns directly.[70]

The Business Entity Analytics and Research (BEAR) database is a tool used by L&I, ESD, DOR, and the office of the Secretary of State to look for reporting inconsistencies between agencies that may signal underground activity. BEAR allows users from one agency to access all records collected about a business from other agencies. For instance, an auditor at L&I could look up a particular business being audited to view the number of employees reported to ESD and compare that to their observations. The database is also used to identify employees as potential witnesses to underground activity or on-the-job injuries.

L&I, ESD, and DOR jointly publish an annual Underground Economy Benchmark Report detailing the three agencies' detection and enforcement activities. The report includes the number of audits carried out by each agency, total tax, interest, and penalties assessed, and a breakdown of where information about potential violators was obtained from (i.e., by phone, online submission, AGO, etc.). Also furnished in the reports are descriptions of the other actions taken by each agency to combat the underground economy, such as total attendance at department workshops and overviews of programs like DOR's Tax Discovery program.[71]

L&I, ESD, and DOR all share information and tips with each other regarding potential and confirmed violations of reporting requirements and proper worker classifications.[72] The three departments also put on joint workshops on small business reporting requirements and resources for growing a business.[73]

These agencies coordinate closely with the AGO during many civil cases brought against violators. This includes sharing information and evidence gathered in assessing tax and reporting obligation violations and collaborating on building pre-emptive cases where appeals are anticipated.[74] The AGO will also share tips with the three industries when relevant, as mentioned above.

Barriers to Collaboration

Our outreach to L&I, ESD, and DOR indicated that a lack of operational information sharing between agencies is a major roadblock to collaboration on UCE activity detection and enforcement. The three agencies are relatively effective at sharing registration and record information through tips or the BEAR database. However, the agencies typically do not communicate their active operations, such as audits, with each other. It is common for several agencies to audit the same business simultaneously without knowing the other's involvement.

[70] Torres, V., Program Manager of Research and Fiscal Analysis, DOR, Eason, A., Management Analyst Compliance, DOR, & Valz, E., Tax Policy Specialist, DOR (personal communication, January 4, 2023).

[71] WA State Depts. of Labor and Industries, Revenue, and Employment Security (2019 - 2022).

[72] Ibid.

[73] WA State Dept. of Revenue. (2022). *Events & Workshops.*

[74] Peterson, E., Sr. Assistant Attorney General, AGO. (personal communication, May 18, 2023).

Often, the only way one agency finds out about another's actions regarding a business is when auditors from each agency accidentally impede the others' investigations or physically run into each other while on the job.[75]

The BEAR database does not record information about violators, so agencies also cannot track each other's actions or look for patterns of violation. This is despite the fact that being in violation of reporting requirements to one agency usually means being in violation of those of the others. For instance, it would be very unusual for a business with misclassified employees to pay WC premiums to L&I but not pay the UI tax to ESD.[76]

Conversations with relevant state agency employees revealed that the lack of interagency transparency results from conflicting privacy policies, statutes, and missions concerning the underground economy.[77]

Our outreach revealed that communication issues between each agency and the AGO were generally of less concern, given the collaborative work of bringing a civil case against an appealing violator. However, information sharing can still be an issue, even within particular cases. The split of underground economy operations across divisions within agencies means that information and evidence relevant to a case might be undetected because AGO staff simply do not know it exists. Even when it is known that an underground economy violation occurred, it can be time-consuming to determine what information is relevant to a particular case.[78] These difficulties mean that cases can be delayed or brought to court without complete information and evidence that would help secure a conviction, leading to the inefficient use of human and monetary resources.

Even within agencies, information sharing can be a problem. Detecting and enforcing the underground economy is split across different divisions within each agency. For instance, within L&I, the division responsible for registering contractors (Field Services and Public Safety division) is separate from the division that conducts most audits and handles most outreach and education (Fraud Prevention and Labor Standards division). At DOR, detection and enforcement are spread between the Audit and Compliance divisions.[79] These different divisions within agencies often do not explicitly coordinate with one another, making it more difficult to pass information between them efficiently. Simply put, one division within an agency might be unaware of information relevant to their work that another division is compiling. Improved operational information sharing between divisions would help improve underground economy operations within agencies and between them.

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[75] Templeton, B., Employment Standards Program Manager, L&I. (personal communication, June 7, 2023)
[76] Gates, C., Senior Policy Advisor, L&I, Nielsen, S., Financial Examiner, L&I. Senior Policy Manager, L&I. (personal communication, April 24, 2023).
[77] Gates, C., Senior Policy Advisor, L&I, Knutzen, L., Program Specialist, L&I, Templeton, B., Employment Standards Program Manager, MacNeil, A., Administrative Regulations Analyst, L&I, Beaty, S., Collections Program Manager, L&I, Nielsen, S., Financial Examiner, L&I, & Blacksmith, J., Prevailing Wages Operations Manager, L&I. (personal communication, April 27, 2023).
[78] Goss, A., Senior Counsel, AGO. (personal communication, May 4, 2023).
[79] At ESD, only one division, the UI Tax Division, regularly engages in underground economy detection and enforcement. McMullins, N., Financial Examiner, ESD. (personal communication, August 21, 2023)

IV. Policies to Address the UCE

In this section, we profile policies and mechanisms in other states to combat the UCE.[80] Overall, detection and enforcement efforts by states are fairly similar and result from collaboration between employment, labor, and revenue agencies and specific task forces established by governors or legislatures. Education and outreach to the public about the underground economy and reporting requirements are also common themes.

Underground Economy Task Forces

State governments commonly establish task forces to address the underground economy. These are usually small committees of representatives from state agencies that deal with underground economic activity detection, enforcement, and prosecution, commonly including representatives from departments such as revenue, employment, and labor, as well as attorneys' general and governors' offices. Some also appoint representatives of the business and labor community as members. While the exact duties given to each task force vary, they commonly include:

- Examination of existing policies and enforcement mechanisms;
- Making recommendations to improve coordination and communications between enforcement agencies or improve enforcement;
- Collaboration with business and labor leaders; and
- Production and dissemination of information related to reporting compliance to the public and business community.

Often, the task force produces a report on all of the above as well as existing research or common enforcement practices in other jurisdictions.

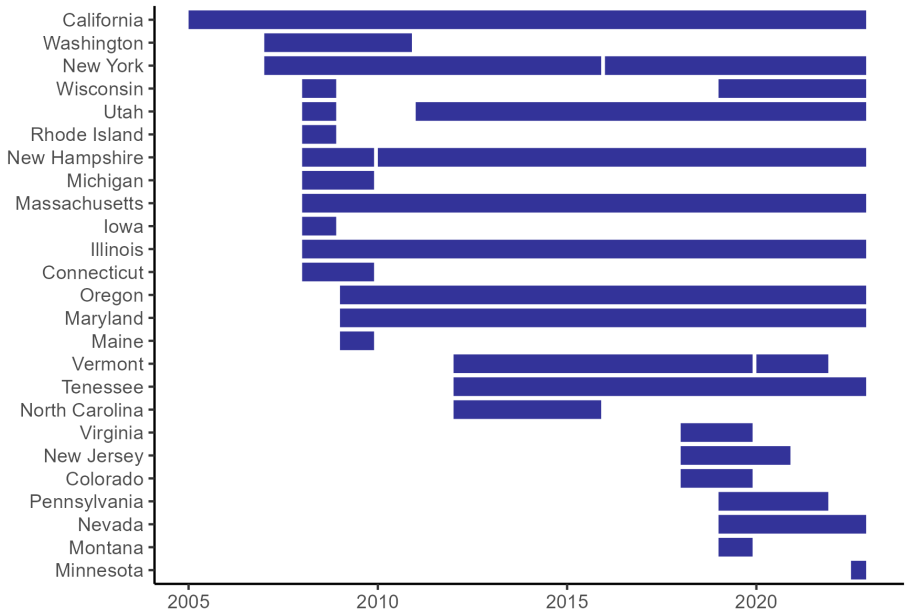
Some task forces are also given special projects, such as creating an independent contractor database like Oregon's Interagency Compliance Network.[81] Many task forces only exist for a few years, dissolving upon completing their original assignment. Others outlive their original charter, evolving into permanent fixtures and continuing to submit reports and provide recommendations to policymakers.

[80] It is not possible to determine the effectiveness of other states' policies in combatting their UCE for a number of reasons. First, individual policies may have very small impacts on outcomes like the size of the UCE, and it is very difficult to disentangle their individual impacts from one another. Second, the UCE is hard to measure precisely (as discussed in previous sections), meaning that estimated changes in the UCE occurring after a policy is implemented could just reflect inaccurate estimation techniques rather than real change.

[81] OR Legislative Assembly. Enrolled H.B. 2815, 75th Assembly (2009).

Exhibit 11

Timelines Of State Level Underground Economy Task Forces



Note:
California's Joint Enforcement Strike Force on the Underground Economy was first created in 1993. Its range is truncated for readability. The years between 2007-2009 and 2018-2019 represent periods when many states were starting task forces. Task forces for which we could not find end-dates are assumed to continue through the present day. Sources for each states' task force can be found in the notes of Exhibit A2 in Appendix I.

Our review of the literature found 30 task forces in 25 states since 1990. We read the legislation for each and noted a few points of comparison. The majority of task forces are made up only of government officials. However, we found 11 (about a third) featuring membership from the business and labor communities. Only a few task forces were specifically concerned with the underground economy in construction; most were scoped to investigate underground activity in other sectors as well.

Exhibit 11 provides a duration graph of the task forces yielded by our search. There are two distinct time periods during which many of these task forces were created. The 2007 – 2009 period saw the majority of task forces start. The first was New York State, which inspired other states to follow suit in the ensuing few years.[82] This was also the period of the Great Recession of 2007 – 2009, a factor that may have influenced interest in the underground economy. The second period was 2018 – 2019, during which 7 of the 30 task forces were formed.

[82] National Employment Law Project. (2020, August). *Public Task Forces Take on Employee Misclassification.* [Policy brief].

Policies from Other Jurisdictions

We now briefly detail some selected policies from other states and jurisdictions. A summary of all featured policies is presented in Exhibit 12.

Oregon's Interagency Compliance Network

Created in 2009, Oregon's Interagency Compliance Network (ICN) is an underground economy task force composed of governmental officials from state employment, labor, and tax authorities, as well as several officials involved with registering contractors in construction and landscaping. However, unlike most task forces, the ICN was specifically established to design a tool for effective communication and information sharing between departments.[83]

The ICN now oversees and maintains that tool, the High-Risk Employers Database (HRED), for the state of Oregon. This database allows auditors to compare IRS Form 1099 (miscellaneous income) to Form 1040 (individual income tax return) to catch discrepancies in how much tax workers are reporting as income. The database is used to quickly look for compliance violations and to share information between departments. It is also used to generate shared leads at regular coordinating meetings with all ICN departments.[84]

Exhibit 12

Featured Policies from Other Jurisdictions

State	Policy	Focus	Description
OR	Interagency Compliance Network	Information sharing, education, detection	• Tool to improve information sharing, find violators using administrative data (HRED) • Consolidated information on the underground economy, public facing
CA	Underground Economy Operations	Detection, enforcement, coordination	• Trio of taskforces that specialize in various aspects of the underground economy, involvement of many enforcement agencies
CA	Assembly Bill 1701	Legal liability for wage theft	• Makes general contractors/construction managers responsible for wage theft committed by subcontractors
NY	Stolen Wage Fund	Compensation for Victims	• Fund that pays out to victims of wage theft that are not fully compensate for lost wages and interest after cases are settled
NY MN WA	Transparently Defining Independent Contractors	Education	• More easily understood test for determining if a worker is an independent contractor or an employee, allows workers to assess their status
(Many)	Memoranda of Understanding with USDOL	Information sharing, coordination	• Agreements to share information between state and federal government, communicate and coordinate enforcement

[83] OR Legislative Assembly. H.B. 2815, 75th (2009).

[84] Cooke et al. (2016).

The ICN is also exceptional at producing material to educate the business community and public about the underground economy. Their website serves as a single-stop information source for individuals and employers interested in the harm caused by the underground economy, the forms payroll fraud takes, the rights of workers in Oregon, reporting underground activity, and guides for when misreporting mistakes occur.[85]

California's Underground Economy Operations Program

The Employment Development Department of California oversees the state's Underground Economy Operations (UEO) program, a trio of task forces focusing on different underground economy aspects. The first of these, the Joint Enforcement Strike Force (JESF), was signed into law in 1993. It focuses on developing and sharing information to combat the underground economy, improve enforcement coordination, and innovate existing detection and enforcement methods. JESF is also authorized to carry out joint enforcement in interagency teams. Its members are representatives of the state's employment, labor, and tax authorities.[86]

The second task force in the UEO program is the Employment Enforcement Task Force (EETF). The EETF focuses on detecting individuals and employers who operate in the underground economy and bringing them into compliance. It conducts on-site inspections of businesses in partnership with JESF in cases of suspected fraud.

The EETF also has representation from the state employment and labor agencies but includes more agencies that deal with permitting and oversight of specific industries. These include the state Bureau of Automotive Repair, the Contractors State License Board, and the Department of Alcoholic Beverage Control.

The final task force in the UEO is the Labor Enforcement Task Force (LETF). Housed under the Department of Industrial Relations, the LETF is composed of many of the same agencies as the JESF and EETF. However, the main focus of the LETF is to work with local governments and share information about the underground economy, thus involving more individuals on the ground in their local communities.

Taken together, California's three-task force approach allows the UEO to involve more players at different levels of government and from different agencies in the underground economy detection and enforcement process than states with a single task force. Each UEO task force can specialize in specific aspects of the underground economy, such as compliance or coordination with local governments while sharing and coordinating with others.

[85] Oregon State Interagency Compliance Network. *Oregon Independent Contractors.*

[86] California Employment Development Department. *Underground Economy Operations.*

California Assembly Bill 1701

California's AB 1701 took effect on January 1, 2018. The bill modified the state labor code by making general contractors liable for "any debt owed to a wage claimant [...] incurred by a subcontractor" for any construction project, public or private, in the state.[87] The law also requires all subcontractors, upon request from the general contractor, to provide information on their and any third party's work on the project (e.g., payment receipts for employees or independent contractors hired by the subcontractor). Essentially, the bill makes general contractors responsible for any wage or benefit theft by their subcontractors and enhances their power to obtain information to verify if any exists on their projects. As a result, general contractors are more likely to monitor the employment practices of their subcontractors, ensuring that they are not misclassifying employers or depriving them of benefits to avoid potential lawsuits from workers on their projects.

New York County District Attorney's Stolen Wage Fund

In 2023, the New York County District Attorney (DA) formed a new Stolen Wage Fund in collaboration with the New York State Department of Labor. The fund provides additional monetary compensation to victims of payroll fraud after case-related restitution has been paid out. In a statement, the DA's office recognized that "victims of wage theft are not always made whole through criminal prosecutions" because restitution payments to victims by offending firms do not necessarily cover all lost wages or interest for wage theft that occurred in the past. The stolen wage fund helps to address these potential shortcomings.[88]

An affected worker may request additional compensation at the end of a case. The Department of Labor vets unpaid wages and approves a worker's application to the DA. The appropriate amount of income may then be doled out from the fund to that worker. The fund is also used to help compensate workers at companies that declare bankruptcy or cannot repay stolen wages. The pilot program features an investment of $100,000 by the DA's office, which will be increased to $500,000 if the program is effective.

Transparently Defining Independent Contractors

Most states use a standard 3-pronged test to determine whether a worker is an employee or an independent contractor. Originally developed by the IRS, the test is meant to be way to determine employment relationships. It asks about three employment-related factors: whether a worker is behaviorally and financially independent of the hiring party and whether their relationship is ongoing. Though comprehensive, the three questions are very broad, and it can be challenging for a worker to determine their status using the test. While the IRS has developed this into a 20-point test, many states still use the simple 3-pronged ABC test.

[87] CA General Assembly. AB 1701. (2017, October 14).

[88] New York County District Attorney's Office. (2023, February 16). *D.A. Bragg Announces Creation of Office's First "Worker Protection Unit" to Combat Wage Theft, Protect New Yorkers from Unsafe Work Conditions* [Press release].

Recognizing a need for greater transparency and clearer communication, several states have developed their own tests. Washington State is among these, using a seven-part test.[89] Minnesota and New York are two more, using nine- and twelve-part tests, respectively.[90] These tests improve transparency by breaking the broad questions in the ABC test into smaller questions that are easier for individuals and businesses without technical or legal expertise to determine their employment relationships. For instance, the New York test asks workers questions such as whether they set their work hours, pay rate, or get evaluated by managers of the projects they work on rather than the somewhat abstract first question in the ABC test about control. Making tests to determine if misclassification (and therefore payroll fraud) is occurring more accessible to workers improves awareness of the underground economy and provides workers with the tools to analyze their employment relationship. L&I's 7-part test is thus an improvement over the standard 3-part test for determining an employment relationship.

Memoranda of Understanding with USDOL

In 2011, the US Department of Labor (USDOL) Wage and Hour Division stepped up its efforts to combat worker misclassification by contacting state and local jurisdictions. In the following years, USDOL, the IRS, and the US Treasury Department signed memoranda of understanding (MOUs) with most US states' labor, revenue, and employment authorities.[91]

The content of these MOUs varied but generally included agreements to collaborate on data sharing, referrals, enforcement, outreach, and compliance assistance. MOUs tend to be temporary agreements, and many initial MOUs signed by states and the above agencies have since expired. Many more have been signed since or are kept on a continual basis.[92] These MOUs help signal interest in collaborating with federal authorities on underground economy enforcement and smooth over potential future roadblocks.

Washington is among the states that have previously signed MOUs with the federal government on misclassification. As of September, 2023, there were two MOUs in effect in Washington. One is between USDOL and the Office of Labor Standards of the City of Seattle; it expires in early 2026. The other is between USDOL and L&I and expires in 2028.

[89] Washington State Joint Legislative Task Force on the Underground Economy (2010).
[90] Minnesota Department of Labor and Industry. *Contractor Registration – Nine-Factor Test;* New York State Department of Labor. *Independent Contractors.*
[91] Cooke, O., Figart, D., & Froonjian, J. (2016). *The Underground Construction Economy in New Jersey.* William J. Hughes Center for Public Policy, Stockton University.
[92] US Department of Labor, Wage and Hour Division. *State Enforcement Outreach Coordination.*

V. Conclusion

The underground economy in the construction industry remains a persistent problem worldwide. It is associated with costs to workers, law-abiding businesses, local, state, and federal programs, and society. Here in Washington, we estimate that illegal employment relationships make up approximately 14.2% of all construction employment in the state between 2011 and 2021 on average, but our low and high estimates range from 4% – 31% per year. The wide ranges of our estimates reflect the uncertainty inherent to measuring an unobservable economy.

These illegal employment relationships lead to significant losses to workers and local, state, and federal governments. Workers in the state lost out on an estimated $83 – $202 million per year, with an average middle estimate of $142.6 million per year in income, overtime and leave, and fringe benefits per year. Total state losses to WC and unemployment insurance programs were between $36 – $83 million per year, with an average middle estimate of $59.8 million per year. Finally, at the federal level, we estimate that losses to FICA programs and federal income tax revenues totaled $165 – $469 million per year between 2011 and 2021, with an average middle estimate of $315.4 million. These estimates only incorporate costs resulting from UCE employment (payroll fraud) and do not capture the full impact of underground activity, which may result from underground businesses or unregistered contractors not paying into social programs and taxes.

The state of Washington spends a great deal of resources on the detection and enforcement efforts regarding the UCE. However, more could be done to improve information and operations sharing between and within them. Businesses in violation of one reporting requirement are almost always in violation of others. Increased coordination during audits and improved information sharing about enforcement actions could help agencies to be more efficient and less isolated in their underground economy-related work. Other states have introduced policies and procedures for improving collaboration between agencies that may be beneficial to consider in Washington. These include increasing the involvement of more government agencies and leaders of industry and labor, consolidating public education, outreach, and fraud reporting materials into a single site, increasing coordination with USDOL, and creating policies or passing legislation to hold general contractors responsible for payroll fraud committed by subcontractors. Establishing a fund to replace the wages of victims of payroll fraud during or following a case would also help to make workers impacted by illegal employment relationships whole.

This report leaves several opportunities for future research. As noted throughout, while we can estimate the scope and cost of payroll fraud in Washington, there is undeniably underground construction activity beyond what we account for. Our methodology cannot determine the number of businesses undetected and not paying business-related taxes and unregistered contractors. Data specific to individual audits conducted by L&I, ESD, and DOR could be used to help pinpoint how frequently businesses violate reporting requirements. Our methodology also relies on comparing responses to different surveys to infer the number of misclassified employees in the state. As discussed, this may underestimate the number of misclassified employees if workers are less likely to respond to surveys if they know they are misclassified. Audit-level data would likewise be beneficial in more accurately estimating misclassification, allowing the researcher to see how common certain types of reporting/classification non-compliance are.

Future work could also focus more closely on the experiences of construction workers in Washington to understand how the UCE directly impacts them. Surveys or interviews could be used to elicit responses on a broad scale. Additional attention could be given to specific populations within the construction workforce. Some research has suggested that particular ethnic groups, such as Hispanics and Latinos, are at a higher risk of payroll fraud or even labor trafficking.[93] While this report substantially innovates on previous measurement techniques, additional research is needed to comprehensively determine the impacts of the UCE on Washington.

[93] Juravich et al. (2021).

Appendices

The Underground Construction Economy of Washington State: *Size, Cost, and Government Enforcement Efforts*

Appendices

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I. Additional Tables

In our review of the literature, we found a total of 13 studies that estimated the extent of construction worker misclassification. Many also reported the share of employers that misclassify any of their workers. Exhibit A1 summarizes their findings.

Exhibit A1

Past Studies of Misclassification from Other States

Study	State	Year of estimate	% of employers misclassifying	% of workers misclassified	Notes
Liu et al. (2014)	CA	2011	—	4.6%	
Berard (2014)	FL	2011	—	16.9%	
Goodell & Manzo (2021)	IL	2018	—	13%	
Kelsay & Sturgeon (2010)	IN	2008	—	—	Estimate 24,323 are misclassified in construction
Carré & Wilson (2005)	ME	2002	14%	11.0%	
Carré & Wilson (2004)	MA	2003-4	14%	5.4%	
Juravich et al. (2021)	MA	2017-9	16.8 - 17.9%	9.5 - 15.8%	
Belman & Block (2009)	MI	2004	26.4%	6.2%	
Goodell & Manzo (2021)	MN	2018	—	5%	
Cooke et al. (2016)	NJ	2001-3	14%	11.4%	
Donahue et al. (2007)	NY	2002-5	—	14.8%	
Berard (2014)	NC	2011	—	35.2%	
Ormiston & Juravich (2022)	RI	2016-21	11.7%	8.4%	
Canak & Adams (2010)	TN	2008	—	17%	% Imputed in NELP (2020)
Berard (2014)	TX	2011	—	37.7%	
Goodell & Manzo (2021)	WI	2018	—	10%	

Exhibit A1 (cont.)

To be included in the table, we required studies to have an estimate specifically of misclassification in their respective states. Studies that had only estimates of the share of employers misclassifying or combined misclassification and other forms of underground activity were excluded. We also excluded studies that based their estimates off of non-random employer audits, as those audits will tend to overstate the rate of misclassification in the general construction workforce.

Belman, D., & Block, R. (2009). *The Social and Economic Costs of Employee Misclassification in Michigan.* Michigan State University, Institute for Public Policy and Social Research.

Berard, Y. (2014, September 4). *Tax Cheats are widespread in Texas construction industry*. Star Telegram.

Canak, W., & Adams, R. (2010). *Misclassified Construction Employees in Tennessee*. Stop Tax Fraud.

Carré, F., & Wilson, R. (2004). *The Social and Economic Costs of Employee Misclassification in Construction [Massachusetts Report]* (No. 43). Center for Social Policy Publications.

Carré, F., & Wilson, R. (2005). *The Social and Economic Costs of Employee Misclassification in the Maine Construction Industry* (No. 42). Center for Social Policy Publications.

Cooke, O., Figart, D., & Froonjian, J. (2016). *The Underground Construction Economy in New Jersey.* Stockton University, William J. Hughes Center for Public Policy.

Donahue, L., Lamare, J.R., & Kotler, F.B. (2007). *The Cost of Worker Misclassification in New York State*. Cornell University, School of Industrial and Labor Relations.

Goodell, N., & Manzo, F. (2021). *The Costs of Wage Theft and Payroll Fraud in the Construction Industries of Wisconsin, Minnesota, and Illinois Impacts on Workers and Taxpayers.* Midwest Economic Policy Institute.

Juravich, T., Ormiston, R., & Belman, D. (2021). *The Social and Economic Costs of Illegal Misclassification, Wage Theft and Tax Fraud in Residential Construction in Massachusetts.* University of Massachusetts Amherst Labor Center.

Kelsay, M., & Sturgeon, J. (2010). *The Economic Costs of Employee Misclassification in the State of Indiana.* Department of Economics, University of Missouri-Kansas City.

Liu, Y.Y., Flaming, D., & Burns, P. (2014) *Sinking Underground: The Growing Informal Economy in California Construction*. Economic Roundtable.

National Employment Law Project. (2020). *Independent Contractor Misclassification Imposes Huge Costs on Workers and Federal and State Treasuries.* [Policy Brief].

Ormiston, R., & Juravich, T. (2022). *Worker Misclassification and Wage Theft in Rhode Island.* University of Massachusetts-Amherst Labor Center.

Exhibit A2 catalogs the underground economy-related task forces we discovered during our review. In all, we found 30 task forces in 25 states operating at some point since 2000. Most states' task forces focus on the underground economy, but a few specifically target the construction industry. Most task forces are composed entirely of representatives of government agencies, though a few also incorporate leaders from the business and labor communities.

Exhibit A2

State Task Forces, 1990 – 2023

State	Task force name	Years active	Construction specific	Include labor/business
California	Joint Enforcement Strike Force on the Underground Economy	1993 - Present	No	No
Colorado	Joint Enforcement Task Force on Payroll Fraud and Employee Misclassification in the Construction Economy	2018 - 2020	Yes	Yes
Connecticut	Joint Enforcement Commission on Employee Misclassification	2008 - 2010	No	Yes
Illinois	Employee Classification Act	2008 - Present	No	No
Iowa	Independent Contractor Reform Task Force	2008 - 2009	No	No
Maine	The Joint Enforcement Task Force on Employee Misclassification	2009 - 2010	No	No
Maryland	The Joint Enforcement Task Force on Workplace Fraud	2009 - Present	No	No
Massachusetts	Council on the Underground Economy	2008 - Present	No	No
Michigan	Interagency Task Force on Employee Misclassification	2008 - 2010	No	No
Minnesota	Task Force on Worker Misclassification	2023 - 2024	No	Yes
Montana	Task Force on Wage Integrity and Misclassification in the Construction Industry	2019 - 2020	Yes	Yes
Nevada	Task Force on Employee Misclassification	2019 - Present	No	Yes
New Hampshire	Task Force on Employee Misclassification	2008 - 2010	No	Yes
	Joint Agency Task Force on Employee Misclassification Enforcement	2010 - Present	No	No
New Jersey	Task Force on Employee Misclassification	2018 - 2021	No	No
New York	Joint Enforcement Task Force on Employee Misclassification	2007 - 2016	No	No
	Joint Enforcement Task Force on Employee Misclassification and	2016 - Present	No	No
North Carolina	Task Force on Employee Misclassification	2012 - 2016	No	No
Oregon	Interagency Compliance Network	2009 - Present	No	No
Pennsylvania	Joint Task Force on Misclassification	2019 - 2022	No	Yes
Rhode Island	Joint Commission to Study the Underground Economy and Employee Misclassification	2008 - 2009	No	Yes
Tennessee	Employee Misclassification Task Force	2012 - Present	No	No
Utah	Independent Contractor Enforcement Council	2008 - 2009	No	No
	Worker Classification and Coordinated Enforcement Council	2011 - Present	No	No
Vermont	Governor's Task Force on Employee Misclassification	2012 - 2020	No	No
	Misclassification Task Force	2020 - 2022	No	No
Virginia	Interagency Taskforce on Misclassification and Payroll Fraud	2018 - 2020	No	No
Washington	Joint Legislative Task Force on the Underground Economy in the Washington State Construction Industry	2007 - 2011	Yes	Yes
Wisconsin	Worker Misclassification Task Force	2008 - 2009	No	Yes
	Joint Enforcement Task Force on Worker Misclassification	2019 - Present	No	Yes

Exhibit A2 (cont.)

State Task Forces, 1990 – 2023, Sources

State	Years active	Source
California	1993 - Present	State of California Employment Development Department. (2018). Joint Enforcement Strike Force. DE 663 (3-18).
Colorado	2018 - 2020	C.O. Exec. Order No. B 2018 003. (Jun. 5, 2018),
Connecticut	2008 - 2010	C.T. Senate SB. 56. (2008).
Illinois	2008 - Present	I.L. 95th General Assembly. H.B. 1795. (2008).
Iowa	2008 - 2009	I.A. Exec. Order No. 8. (2008).
Maine	2009 - 2010	M.E. Exec. Order No. 23 FY 08/09. (Jan. 14, 2009).
Maryland	2009 - Present	M.D. Exec. Order No. 01.01.2009.09. (Jul. 14, 2009).
Massachusetts	2008 - Present	M.A. Exec. Order No. 499. (Mar. 12, 2008).
Michigan	2008 - 2010	M.I. Exec. Order No. 2008-1. (Feb. 1, 2008).
Minnesota	2023 - 2024	Minnesota Attorney General. (2023, July 6). *Attorney General Ellison forms Task Force on Worker Misclassification.*
Montana	2019 - 2020	M.T. Exec. Order No. 4-2019. (Apr. 15, 2019).
Nevada	2019 - Present	Nevada Department of Business and Industry. (2022). *Task Force on Employee Misclassification 2022 Annual Report.*
New Hampshire	2008 - 2010	N.H. Senate. SB 500-FN. 2008 Session. (2008).
	2010 - Present	N.H. Exec. Order No. 2010-3. (Sept. 3, 2010).
New Jersey	2018 - 2021	N.J. Exec. Order No. 25. (May 3, 2018).
New York	2007 - 2016	N.Y. Exec. Order No. 17. (Sept. 5, 2007).
	2016 - Present	New York State Government. (n.d.) *Task Force to Combat Worker Exploitation.*
North Carolina	2012 - 2016	National Employment Law Project. (2020, August). *Public Task Forces Take on Employee Misclassification: Best Practices.* [Policy brief].
Oregon	2009 - Present	O.R. Legis. Assembly. HB 2815-C. 2009 Regular Session.
Pennsylvania	2019 - 2022	General Assembly of P.N. HB 716. Session of 2019.
Rhode Island	2008 - 2009	R.I. General Assembly. Substitute HB 7907. January 2008 Session.
Tennessee	2012 - Present	TN Code § 50-6-919 (2012).
Utah	2008 - 2009	Utah Code § 13-46 (2010).
	2011 - Present	Utah Labor Commission. (2020). *Worker Classification Coordinated Enforcement Council.*
Vermont	2012 - 2020	3A V.S.A. § 21-9 (2017). Governor's Task Force on Employee Misclassification.
	2020 - 2022	Office of the Vermont Attorney General. (2023). *Misclassification.*
Virginia	2018 - 2020	V.A. Exec. Order No. 38. (Aug. 8, 2019).
Washington	2007 - 2011	60th Legislature of WA SB 5926. (May 2, 2007).
Wisconsin	2008 - 2009	Worker Misclassification Task Force. (2009, June). *Report of the Worker Misclassification Task Force. Department of Workforce Development.*
	2019 - Present	W.I. Exec. Order 20. (Apr. 15, 2019).

II. Methodological Appendix

Size Methodology

We now describe in detail how we generate the size estimates of Washington's UCE in Section II. As noted in the body of the text, we use three publicly available datasets to complete our estimate: the American Community Survey (ACS) and Current Population Survey (CPS) from the US Census Bureau (Census), and the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS).[94] First, we calculate the number of misclassified employees in the state by looking at the difference between wage and salary employment from the ACS and payroll reporting records in the QCEW. We then estimate the number of otherwise legally operating independent contractors who underreport income. These two estimates constitute our estimate of total underground construction employment in Washington.

Our middle estimate of misclassified employees is estimated using the following equation:

$$MC^{mid} = infl2 \times (ACS^{ws} + MIG^{ws}) - QCEW$$

Here, ACS^{ws} is the ACS estimate of wage and salary employment in Washington each year, and MIG^{ws} is the net commuting migration into and out of Washington for wage and salary work in the construction sector. This is to account for workers who live in a neighboring state and work in Washington or vice versa. $QCEW$ is total employment reported to state payroll authorities as reported in BLS's QCEW. To obtain low and high estimates of the number of misclassified employees, we add and subtract the Census estimate of the standard error of wage and salary employment to the term in parentheses.

$infl2$ is a multiplicative factor included to account for second jobs in construction. The ACS only asks respondents about their primary job, but many jobs in construction are second jobs, meaning that only accounting for jobs reported to the ACS will lead to an underestimate of the size of the UCE. The CPS does ask respondents about their second job, and we can use that dataset to inform our estimates. However, the CPS is a much smaller survey and does not feature enough respondents in Washington in any sample year to form a state-level estimate of the number of wage and salary second jobs in construction. Therefore, following Ormiston, Belman, and Erlich (2020), we assume that the ratio of second jobs to primary jobs in construction at the national level also holds at the state level. $infl2$ is calculated as

$$infl2 = \left(\frac{ACS^{US} + CPS_{2nd}^{US}}{ACS^{US}}\right),$$

Where ACS^{US} is total national construction employment and CPS_{2nd}^{US} is total second-job construction employment at the national level. $infl2$ will always take on a value of more than one and thus inflates our estimates to account for second jobs.

[94] The Census imputes the industry of employment in the ACS for each respondent based on their responses to three questions that ask the name of their employer, what kind of product or service they provide, and a broad industry categorization with multiple-choice answers (i.e., manufacturing, wholesale trade, retail trade, or other [including construction]). There is the potential that Census workers could accidentally miscode a given respondent as working in construction when they do not actually work for a construction business. For instance, an individual could work for an agricultural employer but mostly perform construction services such as erecting barns or fences. In this case, their industry would be agriculture even though their job is mainly construction. So, there is the potential for some miscoding since industry cannot always be easily inferred. US Census Bureau. (2021). *About industry.*

In our sample, there is a single year (2016) in which the above estimation routine produced a low estimate of misclassified employees in Washington that is less than 0. We set this year's estimate to 0. The negative estimate results from the relatively large standard deviation of the ACS wage and salary estimates being subtracted from the middle estimate.

Our middle estimate of the number of independent contractors underreporting their activity is calculated from the following formula:

$$IC^{mid} = 0.4365 \times infl2 \times (ACS^{total} + MIG^{se} - ACS^{ws})$$

Here, ACS^{total} is total construction employment in Washington (including legal employees, misclassified employees, legitimate independent contractors, and UCE independent contractors), MIG^{se} is net cross-border commuting from other states for self-employed construction workers, and ACS^{ws} and $infl2$ are defined as before. The quantity $ACS^{total} + MIG^{se} - ACS^{ws}$ is thus the number of independent contractors in the state, whether or not they are operating legally and multiplying by $infl2$ accounts for any second jobs missed in the ACS. Finally, for the low and high estimates, 0.4365 is replaced by 0.233 and 0.64, respectively.

We now have an estimated headcount of misclassified employees and an estimate of UCE activity amongst independent contractors. To generate consistent estimates of the size of the underground economy in terms of FTE workers, we will need to account for their hours worked. To estimate the average FTE among construction workers, we pull microdata on hours worked by construction workers from the Census using IPUMS. Data on hours worked at primary jobs come from the ACS, which we filter down to include only those who work in Washington State construction.[95] Data on hours worked at second jobs come from the CPS.[96]

We use the ACS and CPS data to calculate the average number of hours usually worked by construction workers for each year between. Usual hours worked are quite different between first and second jobs, so we calculate these averages separately.

From the ACS and CPS data, we take an average of the usual hours worked by construction workers at their first and second jobs, respectively, for each year between 2011-2021, divided by 40 hours per week (to put hours in FTE terms). We denote these fte_t^1 and fte_t^2 for each year t. We also compute the share of jobs nationally that are second jobs, $share_t^2$. Our estimate of the average FTE worked in construction in Washington is then an average of fte_t^1 and fte_t^2 weighted by $share_t^2$:

$$avgFTE_t = (1 - share_t^2) \times fte_t^1 + share_t^2 \times fte_t^2.$$

[95] Steven Ruggles, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas, and Matthew Sobek. IPUMS USA: Version 12.0 [dataset]. Minneapolis, MN: IPUMS, 2022.

[96] Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles, and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 10.0 [dataset]. Minneapolis, MN: IPUMS, 2022.

Finally, our estimates of the size of the UCE in Washington are calculated by taking the sum of misclassified workers and underreporting independent contractors and multiplying by $avgFTE$. Exhibit A3 presents our estimates of the UCE for each year in our sample.

Exhibit A3

Yearly Size Estimates, 2011 – 2021

Year	Low estimates			Middle estimates			High estimates		
	MC	IC	Total	MC	IC	Total	MC	IC	Total
2011	24,409	9,875	33,869	29,442	18,500	47,360	34,474	27,124	60,852
2012	9,505	9,688	18,567	13,395	18,150	30,517	17,286	26,611	42,466
2013	8,851	8,746	17,435	12,942	16,385	29,057	17,033	24,024	40,679
2014	3,959	9,779	13,947	7,857	18,320	26,575	11,755	26,861	39,203
2015	5,548	10,551	16,277	9,684	19,766	29,776	13,820	28,982	43,275
2016	0	10,480	10,738	4,510	19,633	24,738	9,538	28,786	39,269
2017	2,492	12,952	15,775	8,118	24,265	33,077	13,745	35,577	50,379
2018	321	11,364	12,035	5,905	21,290	28,008	11,488	31,215	43,981
2019	13,811	11,529	26,088	19,350	21,598	42,157	24,889	31,668	58,227
2020	1,734	11,871	13,888	4,302	22,238	27,093	6,870	32,606	40,297
2021	6,826	11,062	17,936	13,030	20,723	33,843	19,234	30,385	49,750

Notes:
MC = misclassified employees.
IC = non-compliant independent contractors.

Cost Methodology

We now discuss the math behind each of the four columns in Exhibit 6 from the main report, using 2021 as an example. All columns start with the assumption of UCE workers earning the mean annual salary amongst those who self-identified as working in construction in Washington on the ACS. First, we return to the costs and benefits to workers considered in Section II of the report to discuss our estimation strategies for each. Next, we describe how we use per-worker costs and benefits to obtain total losses from the UCE in Washington.

Overtime and Paid Leave

These are not usually provided in informal employment relationships and hence represent a cost savings to UCE employers and a loss to UCE employees. We use the Employer Costs of Employee Compensation (ECEC) dataset from the Bureau of Labor Statistics (BLS) to incorporate these costs/savings into our analysis. On average, across study years, overtime and paid leave make up 3.9% and 5.6% of construction workers' salaries in the state, respectively. As previously stated, we assume that their reported salary includes overtime and paid leave, benefits that do not go to independent contractors of UCE workers. In order to back out base pay (exclusive of these benefits), we use data from the ECEC for Washington. This gives us the base wage and overtime/leave compensation for each year, which comes out to $56,993 and $6,674, respectively, for legal employees in 2021. Independent contractors (legal or UCE) and misclassified employees do not receive overtime or leave pay.

Fringe Benefits

We limit our analyses of these benefits to retirement and healthcare and again draw on the ECEC data to estimate average legal employer costs for these benefits.[97] Across study years, healthcare benefits paid on behalf of employees in construction come to an average of 10.2% of employees' salaries and 7.0% for retirement benefits in Washington. We calculate fringe benefits for legal employees by taking total compensation (in 2021, $56,993 base wage plus $6,674 overtime/leave) and multiplying it by 17.2% (the combined healthcare and retirement contributions) to obtain $10,267. We assume that legal independent contractors, misclassified employees, and underreporting independent contractors do not receive these fringe benefits.[98]

Unemployment Insurance

Data on the specific rates paid by employers with UCE workers are not available, so we assume that employers with UCE workers would pay the statewide industry average tax rate. From 2011-2021, the average UI tax rate for construction firms was 3.17%.[99] Employers need only pay this tax on workers' earnings up to a certain amount, the "taxable wage base," which is also adjusted every year.[100] For 2021, workers' salaries were $63,667 on average, but the taxable wage base was only $56,600. This means that an employer's UI payments for a construction worker were

$$\$56{,}600 \times 3.17\% = \$1{,}401$$

Independent contractors (legal or UCE) and misclassified employees do not receive UI coverage from their employers, and hence, their values for UI are $0.

[97] Other common examples of fringe benefits include tuition assistance, employee stock options, use of a company car, and food provided at work.

[98] Ormiston et al. (2020) and Ormiston et al. (2021) analyze the case in which UCE workers are given a "wage premium" equal to the value of legal employees' fringe benefits. The idea is that this premium should provide UCE workers compensation for lost benefits compared to legal employees. However, our conversations with industry experts revealed that these premiums are typically not paid in the real world.

[99] Data provided courtesy of DATA team at ESD.

[100] Washington State Employment Security Department. (2023). *Taxable Wage Base.*

Workers' Compensation

Workers' compensation (WC) premiums are assessed on a dollars-per-hour-worked basis. Like UI premiums, these premiums come from risk classes that are experience-rated. We worked closely with members of the SHARP team at L&I to determine which risk classes (i.e., which construction subsectors) to include in our estimate of average WC premiums for each year.[101] We then generated our estimated average premiums by constructing a weighted average of the premiums charged to each of these classes, where the weights are the total hours worked by (reported) employees of each subsector. These gave us estimates of the average amounts paid by employers to the WC program per worker per hour worked. To convert these into annual rates, we multiplied them by the 2,080 hours in a typical FTE year (52 weeks times 40 hours per week). This process gives the value of $3,168 in Exhibit 6 for the legal employee column. As with UI, only legal employees are mandatorily covered by WC.[102]

Medicare and Social Security

As described in the body of the report, FICA programs are paid for by a flat 7.65% tax to employees and employers in formal employment relationships and a flat 15.3% tax to legal independent contractors on total earnings. For Exhibit 6, we assume that misclassified employees understate their income (and hence underpay their FICA obligations) by 43.65%, which we use to generate our middle estimates. We use 23.3% and 64% for our low and high estimates, respectively. We assume that independent contractors in the UCE do not pay anything in FICA contributions.

Federal Income Tax

The amount of tax paid by legal construction workers, both employees and independent contractors, will depend on not only their income but also their marital status, number of children, the income of their spouse (if applicable), and whether they file as head of household, jointly, or singly. Unfortunately, individual-level data on these variables for workers in the UCE are not available, so we cannot precisely calculate what a particular UCE worker would be paying in federal tax if legally employed. Instead, we make some assumptions about Washington's construction workers in general that allow us to estimate workers' federal tax obligations roughly. We assume that all workers in the UCE are married at the same rate as legal construction workers (an average of 55.8% across study years). Following the assumptions in Ormiston, Belmont, and Erlich (2020), we assume that spouses make no income. If workers' spouses have income, then federal tax liabilities would be higher, and so our method will produce underestimates of tax loss. We also assume that all UCE workers have the mean number of children of legal construction workers conditional on marital status (an average of 1.06 for married workers and 0.52 for unmarried workers, averaged across study years). Finally, we assume that married workers file jointly with their spouse and unmarried workers file as head of household.[103] This allows us to calculate federal tax liability for these workers, which is not paid by those in the UCE.

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[101] Specifically, we only included risk classes within the categories of building construction, trades, miscellaneous construction, miscellaneous professional and clerical, and temporary help.

[102] As noted before, independent contractors have the option of participating in the WC program. However, to do so while in the UCE would involve disclosing their business activities, and so we assume that independent contractors in the UCE do not pay into WC. Thus, UCE independent contractors do not constitute a loss to the state WC system. Washington law also allows for employers to deduct a small percentage of their employee's paycheck to help cover WC premiums. Due to lack of data on the prevalence of this practice, we assume that employers cover all of their employees' WC premiums.

[103] The assumption that unmarried workers file as head of household will cause our estimates of tax loss to be underestimates, as those filing single generally pay more in federal income taxes than those filing as head of household.

For each column of Exhibit 6, we first construct an estimate of what married and unmarried workers would each pay in federal income tax. We then take the average of those two numbers, weighted by the marriage rate, to generate our final estimate. We obtain data on historical tax brackets, rates,[104] standard deductions,[105] and childhood tax credits[106] from the Tax Policy Center and the Tax Foundation. Taxable income for all individuals is calculated using the standard formula. For example, in 2021, for married legal employees, the calculations are as follows:

$$Taxable\ Income\ =\ \$63{,}667\ -\ \$25{,}100\ -\ 0.99 \times \$3{,}000\ =\ \$35{,}597,$$

where $63,667 is the average annual salary for legal employees, $25,100 is the standard deduction for filing jointly, $3,000 is the child tax credit, and 0.99 is the mean number of children per married construction worker. A similar equation holds for unmarried workers but with $18,100 for the (head of household) standard deduction and 0.46 as the mean number of children. The calculations are the same for married and unmarried legal independent contractors, except that the base wage of $56,993 is used in 2021 (since these workers are not paid overtime or leave). For misclassified employees, we generate three estimates for married and unmarried workers corresponding to the different income underreporting rates. We use these to deflate $56,993 to account for income underreporting to federal tax authorities (the middle case is shown in Exhibit 6). Finally, following our assumptions elsewhere, we assume that UCE independent contractors do not report any income at all.

With taxable income in hand, we are able to calculate the total federal income tax obligation for each type of worker. We apply the standard bracketing formula to do this. This process produces a federal income tax liability for the average construction worker in Washington in 2021 of $4,341. We conduct this calculation for both married and unmarried workers across each worker category. Finally, for each type of worker, we take the average of the married and unmarried tax obligations, weighting by the share of construction workers that are married (0.56 in 2021).

Total Value to Workers, Social Insurance, and Labor Costs to Employers

The total value to the worker is calculated as the sum of base wage, overtime/leave, and fringe benefits less federal income tax and FICA (employee). The total value of social insurance is the sum of employer and employee FICA payments and employers' UI and WC payments.

Total labor costs are the sum of base wage, overtime/leave, fringe benefits, employer FICA payments, and UI and WC contributions.

Total Losses to Workers

Losses to workers in the UCE in Washington come from foregone benefits for misclassified employees, including overtime and leave pay, insurance, and retirement benefits. Total losses to workers are calculated by multiplying the per-worker costs to employers for these benefits (in the legal employee's column of Exhibit 6) by the low, middle, and high estimates of the number of misclassified construction employees in Washington.

Total State Losses

Our estimates of losses to UI and WC are our high, middle, and low estimated per-worker losses to these programs' times the corresponding (high, middle, low) estimated number of misclassified employees.

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[104] Tax Foundation. (2021). *Historical U.S. Federal Individual Income Tax Rates & Brackets, 1862-2021.* [Data set].
[105] Tax Policy Center. (2020). *Standard Deduction Amount, 1970-2019* and Tax Foundation. *Standard Deduction.*
[106] Tax Foundation. (2020). *The Child Tax Credit: Primer.*

Total Federal Losses

At the federal level, whether the worker is misclassified as an independent contractor or is an independent contractor underreporting their income, 12.4% and 2.9% of the value of their gross annual income is due to Social Security and Medicare, respectively. As mentioned above, we will need to handle losses to these programs from misclassified employees separately from UCE independent contractors. Our estimates of UCE independent contractors are in terms of FTE-equivalent workers not reporting their income at all. Total losses from these workers are then simply per-worker losses multiplied by our estimates of the number of UCE independent contractors. Misclassified employees, on the other hand, are reported as FTE without any notion of how much income they are misreporting. Therefore, we first multiply their income by our low, middle, and high estimates of income underreporting, 23.3%, 43.65%, and 64%, respectively. Misclassified employees, were they to become properly classified, would earn a higher salary than independent contractors because their employers would have to pay for overtime and leave. We then multiply the resulting amount of unreported income by the FICA tax rates to get per-worker losses. Finally, multiplying these per-worker losses by low, middle, and high estimates of the number of misclassified employees gives the numbers in the Social Security and Medicare rows of Exhibit 6.

As noted in Section II of the main report, we use different assumptions to estimate total federal income tax losses from Washington's UCE. This is because, depending on how many workers are underreporting their income and by how much, there could be a very wide range of potential federal income tax losses. For instance, tax losses would be different if everyone misreported by 64% than if 64% of workers did not report any income despite the same amount of income underreporting taking place. This means that to estimate tax losses accurately, we would need to know something about how many workers underreport *any* income. Better yet, there would be data on how many workers underreport by how much. Our comprehensive search of the literature, along with our inspection of data available from the Census, BEA, BLS, and other government agencies, found no information on the distribution of underreporting among self-employed workers.

Instead, we make the assumption that all misclassified workers and independent contractors underreport by 23.3%, 43.65%, and 64% for our low, middle, and high estimates of federal income tax losses. It is not possible to say for certain whether this assumption will produce over- or underestimates of federal tax losses. However, it should be noted that the assumption that every potential UCE worker underreports by 64% produces one of the highest possible tax loss figures if total misreporting is 64% of income.

Hence, it is likely that the high tax loss estimates are overestimates. It should also be noted that, under the assumption that everyone underreports by 23.3%, it is possible to decrease tax losses by having some individuals fully report their income while others underreport by more. Therefore, it is also likely that our low tax loss estimates may be overestimates of how much tax revenue is lost as well. Nevertheless, it is impossible to be more precise without additional information.

Exhibit A4 presents our yearly total cost estimates for Washington construction workers and state and federal programs.

Exhibit A4

Yearly Total Cost Estimates, 2011 – 2021 ($1000s)

Year	Low estimates			Middle estimates			High estimates		
	Worker	State	Federal	Worker	State	Federal	Worker	State	Federal
2011	247,307	137,707	164,778	298,293	166,097	306,200	349,280	194,488	454,331
2012	99,444	50,446	133,504	140,149	71,094	250,614	180,854	91,743	371,810
2013	91,831	47,889	120,187	134,276	70,023	225,201	176,720	92,158	336,316
2014	44,959	21,870	133,358	89,232	43,406	253,041	133,504	64,941	376,494
2015	63,385	29,918	150,004	110,643	52,225	283,621	157,902	74,531	421,113
2016	0	0	149,173	54,843	23,868	291,999	115,987	50,478	441,648
2017	32,266	12,635	196,706	105,123	41,164	383,803	177,980	69,693	575,430
2018	4,481	1,553	161,915	82,428	28,572	319,254	160,375	55,590	475,483
2019	205,054	60,131	215,698	287,297	84,249	411,074	369,540	108,366	607,662
2020	27,699	7,200	194,188	68,706	17,860	367,753	109,714	28,520	531,373
2021	103,519	31,190	191,899	197,599	59,537	376,903	291,679	87,883	565,251

III. State Government Agency Citations

For convenience, we consolidate all state government agency sources in this appendix.

Exhibit A5

State Government-Created Sources for Agency Actions on the UCE

Agency	Detection	Audits	Education and outreach
Department of Labor and Industries	Washington State Department of Labor and Industries. *Audit Docs*; Washington State Department of Labor and Industries. (2021). *Proactive Investigations and Enforcement Unit Review for Employers.* No. F700-212-000[122-2021].	Washington State Department of Labor and Industries. *About Labor and Industries;* Washington State Department of Labor and Industries. *Register as a Contractor.*	Washington State Department of Labor and Industries. *Workshops and Training Center;* WA State Depts. of Labor and Industries, Revenue, and Employment Security. (2022). *Underground Economy Benchmark Report;* Washington State Department of Labor and Industries. (2020, June). *Employers' Guide to Workers' Compensation Insurance in Washington State.* Publication No. F101-002-000.
Employment Security Department		WA State Depts. of Labor and Industries, Revenue, and Employment Security (2022); Washington State Employment Security Department. *Audits.*	Washington State Employment Security Department. *Request a Tax Penalty Waiver;* State Employment Security Department. (2023). *Employer Resources Webinar Series.*
Department of Revenue	Washington State Department of Revenue. (2022). *Audits;* Samans, J. (2021, March 15). *Tax Discovery Overview.* Business Advisory Council.	WA State Depts. of Labor and Industries, Revenue, and Employment Security (2022); Washington State Department of Revenue (2022); Washington State Department of Revenue. (2022). *Voluntary Disclosure Program.*	Washington State Department of Revenue. (2022). *Events & Workshops;* Washington State Department of Revenue. (2022). *Compliance Studies.*

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