

# Exploring the Costs of Classifying Workers as Independent Contractors: Four Illustrative Sectors

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VOID     CORRECTED

PAYER'S name, street address, city or town, state or province, country, ZIP or foreign postal code, and telephone no.		1 Rents \$	OMB No. 1545-0115  <span style="font-size: 2em; font-weight: bold;">2015</span>  Form 1099-MISC	Miscellaneous Income
		2 Royalties \$		
		3 Other income \$	4 Federal income tax withheld \$	
PAYER'S federal identification number	RECIPIENT'S identification number	5 Fishing boat proceeds \$	6 Medical and health care payments \$	
RECIPIENT'S name  Street address (including apt. no.)  City or town, state or province, country, and ZIP or foreign postal code		7 Nonemployee compensation \$	8 Substitute payments in lieu of dividends or interest \$	
Account number (see instructions)		FATCA filing requirement <input type="checkbox"/>	9 Payer made direct sales of \$5,000 or more of consumer products to a buyer (recipient) for resale ► <input type="checkbox"/>	10 Crop insurance proceeds \$
11		12		
13 Excess golden parachute payments \$		14 Gross proceeds paid to an attorney \$		
15a Section 409A deferrals \$	15b Section 409A income \$	16 State tax withheld \$	17 State/Payer's state no.	18 State income \$

Form **1099-MISC**

Department of the Treasury - Internal Revenue Service

# Exploring the Costs of Classifying Workers as Independent Contractors: Four Illustrative Sectors

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Many workers receive payment as independent contractors rather than as traditional employees. Such “1099” workers include both high-skilled professionals and those on the marginal fringes of the formal economy, both those who prefer flexible engagements and those who suffer fraudulent misclassification, both long-standing occupations and new work relationships in the “sharing economy”. This report explores the business case for independent contractors by presenting scenarios for four different types of workers: truck transportation, home health care, web developers, and construction workers. Publicly available data is used to roughly quantify the non-wage and salary costs escaped by employers who engage workers as independent contractors rather than as wage-and-salary employees. This exploratory exercise illustrates how non-wage and salary costs differ across industries and occupations. For the scenarios presented here, independent contractor status saves businesses between 29 and 39 cents for every dollar of pay – possibly more for certain classes of construction workers. These estimates raise deeper questions regarding how these costs are shifted onto workers and onto the public sector.

*This analysis benefited from the advice of Chris Tilly, Françoise Carré, and Patrick Burns. Any mistakes or omissions are the author’s.*

## INTRODUCTION

The Bureau of Labor Statistics reports that over 14 million Americans are self-employed.<sup>1</sup> While many of these workers are proprietors of incorporated businesses, the majority are classified as “independent contractors” who work for other businesses but fall outside of the conventional and legal norms of stability, control, and protection associated with traditional wage-and-salary employment. The definition of independent contracting is simple. However, the actual utilization of independent contractors and its impacts on the experiences of workers varies both over time and across industries. Some sources note relatively stable incidences of independent contracting over time; others highlight a slight increase.<sup>2</sup> Drilling down below economy-wide indicators reveals that many industries have shifted toward this practice to save on labor costs, sometimes by misclassifying employees as independent contractors. Even beyond the extremes of willful misclassification, the normalization of independent contractor status intersects with other evolving dimensions of flexibility and precariousness in the labor market. Moreover, among the many possibilities for reorganized work implied by the rise of the “sharing economy,” the “gig economy,” the “free agent nation,” and other neologisms, a shared theme is the expansion of situations where work falls under the status of the independent contractor. In fact, the business models of online companies like Uber and TaskRabbit have led some to call for new legal categories for those who occupy the increasingly fuzzy area between “employee” and “independent contractor” (Harris and Krueger 2015).

Setting aside issues of misclassification, job displacement, and the relative pros and cons of independent contractor flexibility, this report explores a straightforward question: Within the state of California, how much does the cost of engaging a worker as an employee differ from the cost of engaging a worker as an independent contractor? Put another way, the analysis attempts to roughly quantify how much employers in certain industries save by classifying workers as independent contractors, holding all else equal. By exploring variation across different groups of workers, this exercise aims to shed light on the business case for shifting segments of the labor force away from traditional employment and toward independent contracting. The focal point of the report is an examination of such cost differences for workers in four sectors noted for their use of independent contractors: trucking, home health care, web development, and construction.

In theory, differentiating independent contractors from traditional employees is straightforward. Independent contractor earnings are reported on a “1099” IRS form instead of the “W-2” form for wage-and-salary employees. The distinction rests on the level of the business’ financial and behavioral control over the worker, the nature

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1 Justin Fox, “Where are all the self-employed workers?” Harvard Business Review, February 7, 2014.

2 See for example, Fox 2014, cf. EMSI’s estimates of the self-employed (<http://www.economicmodeling.com/2012/07/18/characteristics-of-the-self-employed/>).

of the agreement between the employer and employee, the centrality of the work to the business, and the expected duration of the relationship. Typically, the relationship between a single employer and an independent contractor implies less stability and more flexibility than a traditional employee, and independent contractors fall outside of regulatory benefits and legal protections reserved for employees. Some workers benefit from this arrangement; others – particularly those who are misclassified or paid at low hourly rates, for instance – may be victims of either employer ignorance or potentially fraudulent practices to evade legally required non-wage costs and standards for safety and pay. In reality, independent contracting functions in a complex manner that varies across industries in terms of its interaction with labor supply, competitive pressures to increase flexibility and decrease cost, workplace conditions, and tax and insurance liabilities. For businesses, independent contracting may be a marginal practice or a prevailing mode of engaging certain segments of its workforce.

## **THE COST OF A WORKER**

### **The business case for contracting**

Engaging workers as independent contractors implies the potential for both added costs and cost savings. If workers are able to bid-up the price of their work, independent contracting can force employers to compensate them more highly. In a fair agreement, the compensation differential would cover the value of forgone benefits for the contractor. The worker, in this instance, may also benefit from the flexibility to derive earnings from relationships with other firms. Further, some workers might prefer independent contractor status for its short-term engagements and flexible scheduling, since these arrangements might provide income while accommodating other responsibilities and opportunities for earnings and leisure. Employers can also miss out on the benefits of a more stable workforce, such as reduced hiring and training costs and gains in efficiency, as the independent contractor (and not the firm) internalizes the benefits of experience. Clearly, with respect to independent contractors, the calculus of potential worker benefits and employer costs is dependent on the interaction of occupational characteristics, industry competition, labor market conditions, and other business costs.

On the other hand, independent contractor status provides an opportunity for employers to shift or to save on worker costs. To illustrate with a stylized example, consider two workers who earn the same hourly pay from the same employer for similar work. One earns a wage as a W-2 employee; the other receives payment as a 1099 independent contractor. In addition to the wage, the employer typically pays several tax and benefit costs for the employee, including:

Paid leave (e.g., vacation or sick days)

- Supplemental pay (e.g., for overtime)
- Insurance (e.g., health or disability)
- Retirement contributions
- FICA tax for Social Security and Medicare
- Federal and state unemployment insurance
- Workers compensation insurance
- Additional state taxes (e.g., employee training tax in California)

Holding all else equal, the business case for independent contracting may hinge on evading these non-wage-and-salary costs. Additional cost savings can come from evading requirements that are less straightforward to quantify, such as:

- Standards for workplace safety
- Minimum wage laws
- Overtime pay, mandated breaks, and shift limits
- Worker protections and legal remedies
- Collective bargaining agreements

Of course, rarely is all else *actually* equal. The relationship between independent contracting and potential cost savings certainly varies across industries, occupations, skill levels, and even individual businesses.

### **Employee costs, shifted**

Critics often position independent contracting alongside other business practices on the frontiers of the increasing precariousness of work, particularly where misclassification overlaps with the rolling back of legal protections, wage theft, and flexible scheduling. When framed from this perspective, independent contracting is unique with respect to the fact that it is not necessarily bad for workers. Many occupations with the highest incidence of independent contractors are very highly paid professional occupations – doctors, architects, consultants, etc. For these workers, contracting provides a route to maximize earnings and to accommodate other commitments. Indeed, in the last comprehensive survey on the subject, the majority of independent contractors preferred the arrangement (BLS 2005).

The deeper questions, however, concern how independent contracting might be undermining established employment regulations and normalizing worker vulnerability, shifting costs onto workers and depriving public programs in instances where workers do not gain sufficient compensatory benefits in the form of increased earnings or desired flexibility. Independent contractors fall outside of many legal protections, hindering the ability of workers to seek remedy if, for example, a business commits wage theft or fails to provide a safe work environment. In many cases, independent contractors do not earn sufficiently higher rates to offset the value of benefits that they would receive as wage-and-salary employees. It is also worth

noting that the splintering of workforces into employees and contractors hampers organizing and collective bargaining.

Given these possibilities, issues related to independent contracting have gained increasing attention over the past several years, especially in relation to the apparently increasing incidence of misclassification (Carré 2015). State-level studies of agency audit data routinely find that between 10 and 30 percent of employers misclassify their workers, with non-trivial consequences for state and federal revenues (NELP 2015b, de Silva et al. 2000, GAO 2009). Previous analysis has stressed that different models for subcontracting exist for different industries and occupations. The remainder of this report presents estimates of differences between independent contractors and traditional employees with respect to both wage and salary earnings and benefits for specific sectors.

## **ESTIMATING THE COSTS FOR ILLUSTRATIVE SCENARIOS**

This section outlines an approach to approximating the level of savings for employers who engage workers as independent contractors rather than as employees. To be clear, independent contracting as it actually exists does not neatly match up with how it is captured in data on “self-employment”. Both employers and workers are likely to mistakenly characterize worker statuses in surveys, a glaring limitation as the boundaries between traditional employment and alternative work relationships grow increasingly fuzzy. Nonetheless, existing data provides a useful and illustrative starting point.

The analysis depends on two publicly available data sources. First, the Census Bureau American Community Survey (ACS) annually surveys households and reports information on individual employment characteristics. The Public Use Microdata Series (ACS-PUMS) allows for breakdowns by detailed occupational and industrial classifications. An advantage of the ACS-PUMS is that it permits estimates for specific geographies (California in this case). A disadvantage is that the data is self-reported by individuals rather than by businesses. Coding a respondent by industry or occupation depends on the judgment of the surveyor and the respondent. Similarly, respondents may mistakenly report their status as a contractor or as an employee – particularly since many of the industries in question habitually generate a situation that blurs the line between employee and contractor.

The ACS differentiates several categories of employment relationships. This analysis is interested in two: employees of private businesses; and self-employed, unincorporated workers. The former approximately reflects “W-2” workers engaged in standard employer-employee relationships. The latter serves as a proxy, albeit imperfect, for independent contractors and likely overlaps to a large extent with “1099” workers. The ACS also includes a category of self-employed, incorporated individuals who work for their own business, which is not included here. The

Bureau of Labor Statistics (BLS) defines self-employed workers as “self-employed, unincorporated” workers, and the present analysis applies the same distinction to the ACS data, which has a larger sample size than the BLS’ Current Population Survey.

Although previous analyses have adopted this strategy for operationalizing independent contractors, it bears stressing that estimates derived from these codes are subject to sample error and that the nature of this question may make it particularly susceptible to erroneous reporting. Furthermore, the approach does not include individuals who might work as a contractor on the side in addition to a primary job, which may be larger than the population identified as “self-employed, unincorporated”.

For the second data source, the Bureau of Labor statistics analyzes a survey of employers to produce the Employment Cost of Employee Compensation (ECEC) report, providing quarterly estimates of the various costs associated with employment in addition to wages and salaries. These fall under the following categories: paid leave, supplemental pay, insurance, retirement and savings, and legally required benefits. To simplify, these non-wage-and-salary costs would be saved if a firm opts to engage a worker as an independent contractor and not as an employer. The estimates are reported for several industries and occupations, although the categories are not as granular as those of the ACS data. The ECEC rates used for the present calculations are reported in the appendix. For all private sector workers in the US, the ECEC estimates total compensation at \$31.39 per hour worked, which includes all of the following costs:<sup>3</sup>

- \$21.82 in wages and salaries,
- \$2.15 in paid leave,
- \$1.10 in supplemental pay (e.g., overtime),
- \$2.57 in insurance (e.g., health),
- \$1.24 in retirement and savings, and
- \$2.50 in legally required benefits (Medicare, Social Security, unemployment insurance, and workers’ compensation).

In other words, employers paid about 44 cents in benefits and taxes for every dollar paid in wages and salaries. However, these are national, economy-wide totals. Average costs vary for workers in different occupations and industries. Likewise, some costs vary due to state requirements and geographical differences in insurance rates for worker’s compensation and health.

To add specificity to the ECEC figures, a review of the websites of various state agencies was conducted to derive rates that would more closely match regulatory requirements in California. The sources and details of these modifications are

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<sup>3</sup> These totals were taken from table 5 in the most recent ECEC release. The ECEC also lists breakdowns by occupational and industry group, government workers, bargaining status, and geographic region.

noted in the appendix. To summarize, requirements vary for different types of workers and for individual businesses. As a result, assumptions are necessary to estimate California unemployment insurance liabilities and premiums for worker's compensation insurance, the latter of which comprises a substantial portion of legally required benefits for certain classes of worker.

Before presenting the estimates, due to limitations of available data, it is necessary to clarify what exactly the following scenarios present. An ACS-PUMS respondent reports on the characteristics of his or her work status by the primary work relationship in which he or she was engaged during the 12 months prior to the survey. It does not include part-time employment. The ACS-PUMS survey includes average hours and weeks worked during the past 12 months, which may be used to calculate average hourly earnings for a group of workers. However, since this introduces additional sources of error, this report focuses on the cost differences of yearly earnings to ensure meaningful comparisons. Hourly earnings estimates are also presented later in the report without the application of hypothetical tax and benefit costs. For similar reasons, paid leave and supplemental pay (e.g., overtime) are not addressed in the comparisons, since it is not possible to distinguish this type of benefit from reported earnings.

The analysis begins by comparing average yearly earnings for self-employed, unincorporated workers in a given industry and/or occupation with those of traditional employees in the same industry and/or occupation. Average non-wage-and-salary costs are then added to these earnings estimates. The result is comparable estimates of the average annual cost of employment for a worker for a year as a wage-and-salary employee and as an independent contractor. Self-employment shifts the full FICA tax liability onto workers, and self-employed individuals pay 15.3 percent on earnings below \$118,500 for Medicare and Social Security and additional 2.9 percent for Medicare on earnings above that threshold. The cost of other benefits, like time off and health insurance, are also shifted onto the worker. In absence of workers' compensation insurance, the distinction between employee and independent contractor status also alters the experience of injury risk and liability among workers and firms.

Estimates of employer costs for four independent contractor scenarios as defined by industry and occupation are split into tables 1 and 2 for formatting reasons. Details on the construction of the tables are reported in the appendix, as well as the assumptions behind the costs of unemployment insurance and workers' compensation insurance. For illustrative purposes, the four scenarios have been chosen to approximate industries and occupations where independent contracting and misclassification are noted issues: Trucking, home health care, construction, and web development.<sup>4</sup>

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4 These scenarios are similar to case studies discussed in a de Silva et al. (2000) report that provided an early and relatively comprehensive analysis of misclassification.



Table 1: Average cost scenarios: truck transportation and home care workers

	Truck transportation		Home health care	
	W&S	IC	W&S	IC
Average earnings	31081.62	44651.79	21840.37	19483.02
Health insurance	3488.30	(5011.28)	2451.10	(2186.6)
Retirement/ savings	2230.28	(3204.02)	336.01	(299.74)
Social security	1927.06	(2768.41)	1354.10	(1207.90)
Medicare	450.68	(647.45)	316.69	(282.50)
Fed. unemployment insurance	126	(126)	126	(126)
Cal. unemployment insurance	413	(413)	413	(413)
Cal. Employment Training Tax	7	(7)	7	(7)
Worker's compensation insurance	3754.66	(5393.94)	1546.30	(1379.40)
Total taxes and benefits	12396.98	(17571.10)	6550.24	(5902.17)
Total worker costs	43478.60	(62222.90)	28390.62	(25385.19)
Total added costs per \$ of pay	0.40	(0.39)	0.30	(0.30)
<b>Actual worker costs</b>	43478.60	44651.79	28390.62	19483.02

“W&S” indicates wage-and-salary employees; “IC” indicates independent contractors. Parentheses indicate costs that would be experienced by the employer if the IC was classified as a W&S employee at the same rate.

Source: Author analysis of BLS-ECEC, ACS-PUMS, and California EDD, WCIRB, and IRS websites (see appendix).

Table 2: Average cost scenarios: web developers and construction workers

	Web developers		Construction workers	
	W&S	IC	W&S	IC
Average earnings	54312.90	33548.83	34781.02	27110.80
Health insurance	6095.55	(3765.19)	3903.48	(3042.65)
Retirement/ savings	4331.70	(2675.67)	2869.06	(2236.30)
Social security	3367.40	(1207.95)	2080.00	(1680.87)
Medicare	787.54	(486.46)	504.32	(393.11)
Fed. unemployment insurance	126	(126)	126	(126)
Cal. unemployment insurance	413	(413)	413	(413)
Cal. Employment Training Tax	7	(7)	7	(7)
Worker's compensation insurance	54.31	(33.55)	see table 3	see table 3
Total taxes and benefits	15182.50	(9586.90)	>9979.29	(>7898.97)
Total cost of worker	69495.40	(43135.73)	>44760.31	(>35009.77)
Total added costs per \$ of pay	0.28	(0.29)	>0.34	(>0.34)
<b>Actual worker costs</b>	69495.40	33548.83	>44760.31	27110.80

“W&S” indicates wage-and-salary employees; “IC” indicates independent contractors. Parentheses indicate costs that would be experienced by the employer if the IC was classified as a W&S employee at the same rate.

Source: Author analysis of BLS-ECEC, ACS-PUMS, and California EDD, WCIRB, and IRS websites (see appendix).

Deregulation of the trucking industry has forced trucking companies to become increasingly reliant on independent contractors in response to heightened competition (de Silva et al. 2000, Carré 2015). Misclassification is particularly prevalent among short-haul truckers (Smith et al. 2014). Typically, home health care is mediated by referral agencies that also have incentives to rely on sub-contractor networks, despite a level of control that is more in line with an employer-employee relationship (NELP 2015a). Most construction projects are organized through contractor bids, and this system to an extent relies on individuals who work as independent contractors, some of whom are experienced but many of whom are less-skilled and disproportionately recent immigrants (Carré and Wilson 2004, de Silva et al. 2000). The web developer provides an example of a relatively high-skill services occupation without the injury risk – and liability – associated with the other scenarios. The example is also fitting because web developers have a much higher incidence of independent contracting than software developers, despite overlapping skills and similar working processes and environments.

The estimates should be interpreted as hypothetical illustrations of employer wage and non-wage costs for an “average employee” over a year in comparison with what the employer would escape paying in non-wage costs (in parentheses) by instead paying a worker as an “average independent contractor”. Of course, these average workers provide only stylized examples. Tax and benefit costs vary from worker to worker and from firm to firm. Moreover, employees and independent contractors in most cases are not perfectly substitutes in terms of experience, productivity, and skill level.

Still, the scenarios show considerable variation in the incidence of employment costs. While independent contractors in the home health and construction industries and the web developer occupation earn less than employees, independent contractors in the truck transportation industry earn more. The largest portions of benefit and tax savings are health insurance, Social Security, and worker’s compensation. Worker’s compensation premiums vary for different classes of workers, and estimates here are derived from pure premiums posted by the Workers’ Compensation Insurance Rating Bureau of California (WCIRB).<sup>5</sup> While worker’s compensation premiums are minimal for web developers, rates begin at 12 and 7 percent of payroll for trucking and home care workers, respectively. Table 3 further illustrates variation across different groups of construction workers, for whom injury risk can vary greatly depending on the division of labor at a given work site. Premiums for drywall installers are fairly modest for blue-collar work, but premiums for roofers comprise a large portion of payroll costs. Both of these positions are noted for routinely being staffed by independent contractors. Table 3 also illustrates that pure premiums

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5 Pure premium rates are advisory rates on which insurance companies base their actual rates. Since they do not account for administrative and other overhead costs, actual insurance rates are routinely higher. For more information on the difference between insurer rates and pure premium rates, see <http://www.wcirb.com/guide-to-workers-compensation/rates/pure-premium-rates>.

Table 3: Variation in worker’s compensation pure premiums for different classes of construction employees

WCIRB class		pure premium
Concrete or cement work	wage below \$24/hr	12.13
	wage above \$24/hr	6.89
Wallboard application	wage below \$33/hr	9.89
	wage above \$33/hr	5.33
Carpentry	wage below \$30/hr	20.15
	wage above \$30/hr	6.96
Roofing	wage below \$23/hr	41.42
	wage above \$23/hr	17.76

Note: Advisory pure premium rates are expressed as dollars per \$100 of payroll and are based upon loss and payroll data submitted to the WCIRB by all insurance companies. Source: WCIRB website.

Table 4: Average costs of paid leave and supplemental pay as a ratio of wages by industry

Industry	Costs as a ratio of wage and salary	
	Paid leave	Supplemental pay
Truck transportation	8.8%	4.7%
Home health care	8.6%	3.2%
Information	14.1%	6.4%
Construction	6.2%	3.4%

Paid leave includes vacation, sick, holiday, and personal time. Supplemental pay includes overtime and premium pay in addition to regular work schedules (e.g., holidays), shift differentials, and non-production bonuses. Information industry was used to approximate norms for web developer occupation due to the lack of granularity in the ECEC data. Source: BLS-ECEC.

are higher for lower-wage workers within each class, which at least suggests the possibility of relatively greater incentives for independent contracting when workers are paid less.

In addition to costs related to benefits and contributions to public programs, employers also presumably escape paid leave and supplemental pay unless these are incorporated into payments to independent contractors. Table 4 reports ECEC estimates for the costs to employers of paid leave and supplemental pay in relation to wage-and-salary costs.

To reasonably approach an “apples-to-apples” comparison, the estimates presented above attempt to quantify the amount that a private-sector employer avoids in tax and benefit costs over the course of an entire year for the average independent contractor. Differences in *hourly* earnings between employees and independent contractors also suggest that employee status shapes the levels at which workers are compensated, especially since independent contractors may be less likely to

Table 5: Estimated average hours worked and earnings per hour worked

Industry		W&S	IC
Truck transportation	Weekly hours	44.14	45.19
	Hourly earnings	18.75	23.51
Home health care	Weekly hours	34.99	32.94
	Hourly earnings	17.27	17.65
Web developers	Weekly hours	39.08	30.77
	Hourly earnings	31.57	25.04
Construction	Weekly hours	39.02	34.95
	Hourly earnings	24.57	22.68

“W&S” indicates wage-and-salary employees; “IC” indicates independent contractors. Estimates exclude workers with estimated hourly earnings below \$1 and above \$100. Source: Author analysis ACS-PUMS (see appendix).

work full-time or to have standard schedules. The ACS-PUMS reports typical hours worked per week and ranges for weeks worked over the prior year, allowing for a rough estimation of hourly earnings. Table 5 presents hours worked and earnings per hour for each of the four scenarios. Unlike the previous yearly estimates, these hourly estimates do not differentiate between total earnings and wage and salary income. To eliminate noise in the data, and because this report is primarily interested in low- to mid-level earners, the estimates exclude workers earnings less than \$1 per hour and more than \$100 dollars per hour. Again, details are reported in the appendix.

In table 5, truck transportation workers stand out as somewhat of an exception. Average hours worked are very high (over 40) for both employees and independent contractors, but independent contractors earn higher average hourly rates than their employee counterparts. Still, the differential is insufficient to cover the difference in tax and benefit costs. Moreover, self-employed drivers may encounter significant fixed costs that are not considered here. By contrast, home health care workers work similar hours for at similar hourly rates regardless of classification. This is consistent with the somewhat arbitrary nature of independent contractor classification reported in previous studies on home health care. For both web developers and for construction workers, employees work more hours at higher hourly rates. These gaps substantiate the contention that independent contractors actually earn lower effective wages than employees and that independent contractor status is implicated with sector-specific patterns of workforce segmentation.

## CONCLUSION

The estimates presented above are based on a restrictive set of assumptions. As such, they should be interpreted as a data-driven but hypothetical exercise in comparing the employer costs of hiring a wage-and-salary employee for a year versus those associated with engaging a worker as an independent contractor for

a year. The estimates are based on analyzing different legally required benefits, averages derived from employer surveys, and averages derived from surveys of individuals. Surely, these averages mask considerable variation among actual businesses and workers. Moreover, this analysis does not claim to reflect the impact of independent contracting on the budgets of state and federal programs, on costs related to unemployment and health care, or on the relative utility of independent contractor or employee status for workers and businesses. These complex issues are outside of the scope of the present analysis.

Notwithstanding the limitations, the analysis shows that employing a worker as an independent contractor in California implies the potential for significant reductions in benefits to workers and contributions to insurance pools and public programs. Even where contractors do not earn significantly less by the hours than employees, it is unlikely that differential rates of compensation for independent contractors and employees are sufficient to cover the savings in costs of benefits and taxes by employers. Across the scenarios, the estimates suggest that employers escape between 29 and 39 cents in taxes and benefit costs per dollar of payment for work. For some classes of construction workers, this rate could be even higher.

The exercise in quantifying non-wage and salary costs presented above synthesizes imperfect data from different sources and with restrictive assumptions. It should be interpreted with caution and not as an accounting of the actual aggregate effects on businesses, public budgets, or workers. The analysis does, however, serve to ground the business case for contracted work and to illustrate how its drivers vary across different industries. The deeper questions, of course, concern how non-wage and salary costs contribute to the incidence of independent contracting and misclassification, potentially shifting costs onto workers.

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## TECHNICAL APPENDIX

This appendix details the calculations presented above and their basis in relevant and necessary assumptions. The first part details the sources, why they were selected, and how they were incorporated, with appropriate references. The second part clarifies the estimation of average yearly earnings for each scenario and the application of the rates. The third part focuses on the estimation of average hourly earnings.

### Sources of estimates and rates

Five sources were used:

1. Earnings estimates were derived from author analysis of the most recent ACS-PUMS 3-year sample (2011–2013) for employees of private businesses and for “self-employed, unincorporated” workers.
2. Federal FICA taxes for Medicare and Social Security and federal unemployment taxes were derived from rates posted on the IRS website.
3. California state taxes and rates were derived from California departmental websites.
4. Worker’s compensation premium rates were derived from the Workers’ Compensation and Insurance Ratings Bureau (WCIRB) website.
5. Other employer cost rates were derived from the September 9, 2015, BLS-ECEC release, which reports average rates for June 2015.

Table 6 identifies the industry and occupation definitions used in the ACS-derived estimates, which are generally comparable but not exactly the same as NAICS and SOC codes, respectively. All estimates are reported in 2013 dollars, since 2011–2013 is the most recent available sample. However, all rates used to derive non-wage and salary employer costs are current for 2015. Table 7 lists the sources of employer cost rates that were used across all four scenarios.

Table 8 specifies the BLS-ECEC estimates used for each scenario. Note that the BLS-ECEC-derived rates used to calculate the scenarios above differ from the “raw” rates reported by in the BLS-ECEC release. The ECEC tables report costs as a rate of total employer costs. Since average wage and salary is estimated from California-specific ACS microdata, the rate for each itemized cost is first converted to a ratio of wage-and-salary costs (e.g., if ECEC reports wage-and-salary costs as 70 percent of total costs and health insurance costs as 8 percent of total costs, health insurance costs were estimated by multiplying  $.08/.70$  by the relevant ACS-derived wage-and-salary estimate).

Table 9 reports the WCIRB classes used for three of the four scenarios. Construction classes are not reported here because they are reported in the body of the paper in table 3. With imperfect overlap, assigning each scenario to a WCIRB class was

Table 6: ACS occupational and industry categories for each scenario

	Industry or occupation	Description
Truck transportation	Industry 6170	Truck transportation
Home health care	Industry 8170	Home health care services
Web developers	Occupation 1030	Web developers
Construction workers	Industry 0770	Construction, including cleaning during and immediately after

All estimates were derived from the 2011-2013 3-year ACS-PUMS release and weighted using the included population weights.

Table 7: Common costs across all scenarios

	Source	Assumptions
Health insurance	BLS-ECEC	Table 7. The Pacific census region estimate of 7.8 percent of total costs was used for all scenarios rather than occupation and industry-specific estimates. Although the pacific region also includes Alaska, Hawaii, Oregon, and Washington, health insurance costs likely vary more by geography than by industry. Since variation is small across the four scenarios (from 7.7 percent for the Construction industry to 8.9 percent for the Information industry), the choice is reasonable and conservative.
Social Security and Medicare	IRS FICA	Topic 751 - Social Security and Medicare Withholding Rates. Employer-side rates are 6.2 and 1.45 percent, respectively (assuming that employees earn less than \$118,500 in taxable wages).
Fed. unemployment tax (FUTA)	IRS FUTA	The base rate is 6 percent on the first \$7,000 of payroll, but payment of state taxes entitles employers to a credit of 5.4 percent. California has a FUTA credit reduction of 1.2 percent, leaving federal taxes at 1.8 percent of \$7,000. Assuming that the threshold is met, The result is \$126.
Cal. unemployment insurance	Cal. Employment Development Department	The UI rate schedule in effect for 2015 is Schedule "F+," allowing for contribution rates from 1.5 to 6.2 percent. Assuming a reserve ratio of 0, the contribution is 5.9 percent of the first \$7,000 of taxable wages. Assuming this rate and that the threshold is met, the result is \$413, although different employers could experience slightly higher or considerably lower rates.
Cal. Employment Training Tax (ETT)	Cal. Employment Development Department	ETT is .1 percent of the first \$7,000 of taxable wages (assuming that the threshold is met), or \$7.



Table 8: ECEC-derived costs for paid leave, supplemental pay, retirement/savings

	Table	Industry or occupation
Truck transportation	9	All workers in private industry, transportation and material moving occupational group
Home health care	14	Nursing and residential care facilities, service occupational group
Web developers	6	Information industry group
Construction workers	10	Construction industry group

All tables are drawn from the September 9, 2015, ECEC release from the Bureau of Labor Statistics and reflect June 2015 estimates.

Table 9: WCIRB classes by scenario, excluding construction

Table	Class	Phraseology
Truck transportation	7219(1)	TRUCKING FIRMS – N.O.C. – including terminal employees and mechanics
Home health care	8827(1)	HOME CARE SERVICES – all employees
Web developers	8859(2)	INTERNET OR WEB-BASED APPLICATION DEVELOPMENT OR OPERATION – including Clerical Office Employees and Outside Salespersons

All classes, descriptions, and pure premium rates are drawn from the WCIRB website’s class lookup tool.

based on judgement, as some occupations could fall under a few different WCIRB classes. Even so, similar classes tended to have similar pure premium rates – with the exception of construction, where rates varied widely as discussed in the main body of the report.

### Calculation of yearly earnings estimates

Estimates for average earnings were derived from population-weighted tabulations of the most recent 3-year American Community Survey Public Use Microdata Series (2011-2013). The differentiation of employees and independent contractors relies on the “Class of Worker” field. Specifically, private employee averages were derived for those identified as an “Employee of a private for-profit company or business, or of an individual, for wages, salary, or commissions,” and independent contractor averages were derived for those identified as “self-employed in own not incorporated business, professional practice, or farm.”

Two earnings estimates were generated for each of the two classes of worker: total person’s earnings and wage and salary income in the past 12 months. For most workers classified as private employees, the majority of earnings is comprised of wages and salaries. Conversely, workers classified as independent contractors, on average, also reported wages and salary incomes, which comprised only a small portion of total earnings. There are several possible reasons for independent contractors to report

wage and salary earnings, including a transition from employee to independent contractor status during the 12-month period, side employment where independent contracting is the main source of income, and reporting errors. Conversely, workers identified as employees may also derive non-wage and salary earnings from other pursuits, including work on the side as an independent contractor.

To derive an estimate of earnings for meaningful comparison, different approaches were taken for independent contractors and employees. For employees, the tables report average wage and salary income. For independent contractors, the tables report the total person's earnings minus wage and salary income. In effect, this allows for comparing the wage and salary income of employees with the non-wage and salary earnings of independent contractors and thus approximates the central comparative aim of the analysis. Both of these totals were less than the total person's earnings for all four scenarios.

### **Calculation of hourly earnings estimates**

Hourly estimates were also derived from the ACS-PUMS using a combination of three fields: total person's earnings (but not wage and salary income), usual hours worked per week past 12 months, and weeks worked during the past 12 months. Multiplying weeks worked during the past 12 months by usual hours worked gives a rough estimate of total hours worked during the past 12 months. By extension, dividing total person's earnings by total hours worked yields earnings per hour worked, a conceptual approximation of each worker's average wage over the course of the year. However, the ACS-PUMS reports weeks worked during the past 12 months across 6 unequal ranges. To convert the ranges into an approximation of "weeks worked" for respondents falling into each range, the geometric mean of each respective range was assigned to the respondent. In effect, each worker's total yearly hours was approximated by multiplying the geometric mean of the worker's range of weeks worked in the past 12 months by the typical weekly hours worked during the past 12 months.

This procedure generates noise at the bottom and top of the distribution. For this reason and because the analysis is primarily interested in the status of low- to mid-wage workers, all workers earning below \$1 dollar per hour and above \$100 per hour were dropped from the calculation of hourly earnings.

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