The Employer Penalty, Voluntary Compliance, and the Size Distribution of Firms: Evidence from a Survey of Small Businesses[*]

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Abstract

A new survey of 745 small businesses shows little change in the size distribution of businesses between 2012 and 2016, except among businesses with 40–74 employees, in a way that is closely related to whether they offer health insurance coverage. Using measures of both size and voluntary regulatory compliance, the paper links these changes to the Affordable Care Act's employer mandate. Between 28,000 and 50,000 businesses nationwide appear to be reducing their number of full-time-equivalent employees to below 50 because of that mandate. This translates to roughly 250,000 positions eliminated from those businesses.

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I. Introduction

Taxes and regulations are known to affect the size distribution of businesses, due to the fact that smaller businesses are less subject to enforcement. Large informal sectors are an obvious result in developing countries (Gërxhani 2004), but measurement challenges have hindered quantifying the size distortions' impact on developed-country employment and productivity. This paper uses new and unique data that is readily linked to a specific regulation: the 2010 Affordable Care Act's (ACA) employer mandate. The mandate's size provision took effect in 2015 and is especially interesting, not only due to its notoriety, but because of its bright-line threshold and enforcement by monetary penalty. This paper quantifies the size incentive of that penalty, develops a framework for combining evidence on size with evidence on voluntary compliance, and uses a new survey of businesses to quantify the number of businesses that changed from large to small as a consequence of the law.

The key size threshold in the ACA is 50 full-time equivalent employees (FTEs), which establishes the legal definition of a "large" business that is subject to the employer mandate. Momentarily ignoring the distinction between FTEs and total employment, I display in Figure 1 a time series of the share of employment by small businesses, by a 50-total-employees criterion, among private businesses sized 25-99. The data is sourced from the tables prepared by the Agency for Healthcare Research and Quality from the insurance/employer component of the Medical Expenditure Panel Survey.[1] Both the 2015 and 2016 shares are well outside the range observed in the recent history 2008-14, and in the direction to be expected given that large employers were subject to a new regulation.

Garicano, Lelarge, and Van Reenen (2016) show how the distortionary effects of size-dependent regulations appear muted when the observer uses a different measure of size than regulators do. This is the case in Figure 1, which looks at total employment as

[1] The MEPC-IC is a nationally representative sample "drawn annually from the most recently updated version of the U.S. Census Bureau's Business Register" and includes about 39,000 private businesses each year (Agency for Healthcare Research Quality 2017). It has no public use files.

opposed to the full-time equivalents specified by the ACA and has total employment binned rather broadly (25-49 and 50-99). Both Garicano, Lelarge, and Van Reenen (2016) and Gourio and Roys (2014) therefore obtain size measures that are especially close to regulator measures and find large size distortions in the French economy. They do not link the distortions to specific regulations, but instead focus on France where there are many size-dependent regulations thought to be binding. One of their estimation methods is to compare the actual firm size distribution to a Pareto distribution and measure the nonmonotonicity of the actual distribution in the neighborhood of the threshold.

The Mercatus-Mulligan data used in this paper has six measurement advantages. First, it separately measures full- and part-time employment and therefore can produce good proxies for FTEs. Second, the size distortion can be linked to a specific and relatively new regulation, which permits a before-after analysis as shown in Figure 1. Third, voluntary compliance – that is, offering employer-sponsored health insurance (ESI) even when exempt from the mandate – can be measured. This allows the measurement of size distortions to focus on businesses for which the employer mandate is binding. Fourth, the survey was not conducted at the corporate level and therefore did not require any corporation's approval to publish results. Rather, individuals were confidentially surveyed, and these individuals happened to be managers at businesses. If the sample aggregate happens to reveal politically-incorrect business practices, such a finding cannot impugn any particular business. Fifth, the managers of the sample businesses were asked whether and how the law changed their hiring practices, with answers that can be compared to the size and compliance measurements obtained earlier in the survey. Sixth, because the ACA has proven to be a partisan issue, the survey was structured to complete all measurements of actual business activity, which get the most weight in my analysis, before the survey respondent was asked anything about the Act itself. Moreover, the end of the survey asked about each respondent's political affiliation, which turned out to be almost exactly balanced between Democrat and Republican.

All measurement methods have some weaknesses in practice. The Mercatus-Mulligan survey was conducted only after the ACA, and therefore cannot measure firms that went out of business because of, or at least coincident with, the law. Before-after analysis with the survey requires either using its retrospective questions, or linking with

other surveys, both of which are done in this paper. The respondents are drawn from a verified-respondents panel, which is an asset groomed by a commercial survey enterprise to economically provide accurate statistics to its clients. But the enterprise also involves confidential intellectual property, which makes it difficult to simply model how respondents are ultimately drawn from the national population of small-business managers.[2] The sample has more than 700 respondents but thousands of respondents would permit even more analysis to be done, such as accurately distinguishing the number of firms with 48 FTEs from those with 49. Also important is that the survey's strengths and weaknesses are unique relative to the government surveys and other measurement methods used to study the size distribution of businesses and the impact of regulations generally. The survey can thereby substantially contribute to the overall body of knowledge on these subjects by offering a new perspective that does not automatically inherit previous measurement weaknesses.

Section II of this paper briefly provides the quantitative details of the Affordable Care Act's employer mandate. Section III has a simple cost function framework for considering a business' tradeoffs between changing its hiring practices versus its fringe-benefit offerings, especially as they relate to the propensity to offer ESI by size of business. The Mercatus-Mulligan sample details are provided in Section IV. Section V displays estimates of the nationwide prevalence of "49er" businesses, which are defined to be small businesses that have fewer than 50 full-time-equivalent employees for the purpose of avoiding employer-penalty assessments. Section VI concludes.

Appendix I displays the Mercatus-Mulligan survey instrument and provides additional summary statistics. Appendix II details the construction of an independent variable used in some of this paper's analysis. A recent empirical paper by Duggan, Goda and Jackson (2017) concludes that "labor market outcomes in the aggregate were not significantly affected" by the ACA. The paper focuses on comparisons of geographic areas, such as states with and without the ACA's Medicaid expansion, but these areas are no different in terms of the implementation of the employer mandate or the number of 49ers that resulted. In other words, the DGJ paper is not designed to measure the labor market effects of the employer mandate. Appendix III discusses the DGJ methods in

[2] The sampling properties can be empirically assessed by comparing sample distributions to distributions from larger government surveys (sometimes censuses), which is done in this paper.

more detail and shows how the numerical results reported there are, despite the conclusions appearing in their prose, consistent with the results in this paper.

II. ACA Background

Multiple components of the ACA can affect employment and the composition of employee compensation: premium tax credits, cost-sharing subsidies, Medicaid expansions, the individual mandate, the employer mandate, and the small employer health tax credit. Except in the increasingly rare cases in which part-time positions are eligible for ESI too, an employee (and family) at a firm that offers affordable coverage would be eligible for premium tax credits and cost-sharing subsidies (hereafter, "exchange subsidies") only if he worked part-time, or not at all, which reduces his willingness to supply full-time labor to employers offering affordable coverage. This can discourage employers from offering coverage. A Medicaid expansion can encourage or discourage earning income.[3] The individual mandate, which imposes a monetary income-based penalty on non-poor households who fail to purchase coverage when it is affordable, can discourage households from earning income but encourage workers to supply their labor to businesses offering coverage rather than those not offering it.

The employer mandate, which is the focus of this paper, is also designed to encourage people to be enrolled in health insurance. However, unlike the other above-mentioned ACA components, the employer mandate is enforced based on the size of the employer and is therefore expected to affect the distribution of employment and health-insurance offerings across employers according to their size.

Federal statutes and regulations specify that the employer mandate is enforced in four steps, ordered chronologically below, and terminated with either a Section 4980H(a) penalty or a Section 4980H(b) penalty. First, an employer is designated as large or small based on its full-time-equivalent (FTE) employment in the calendar year prior to the

[3] A household that was keeping its income below the Medicaid income threshold without the expansion would be encouraged to earn more under a threshold-raising expansion. On the other hand, households earning above both thresholds are more likely to reduce their income (for eligibility purposes) when the threshold is higher.

coverage year, with 50 as the cutoff.[4] Part-time employees (less than 30 hours per week) count toward FTEs in proportion to their hours worked.[5] Employers self-designate themselves as large.[6] Second, at the conclusion of the coverage year, large employers use Internal Revenue Service (IRS) Form 1094-C to indicate, by month, full-time employment, total employment, and whether minimum essential coverage was offered to "at least 95% of its full-time employees and their dependents." They use Form 1095-C to list, by month, the required employee contribution for that coverage and the name (SSN, etc.) of each employee enrolled (U.S. Department of Treasury, Internal Revenue Service 2017). Third (and perhaps chronologically overlapping with the coverage year and the employer submissions of IRS Forms 1094-C and 1095-C), the Department of Health and Human Services notifies employers (FFM notices) about their employees and dependents who received exchange subsidies during the coverage year.

Fourth, the IRS uses the FFM notices together with Forms 1094-C and 1095-C to determine each large employer's penalty, if any. No penalty is owed by small employers, employers without FFM notices, or employers with only plan-ineligible employees (especially part-time employees) listed on their FFM notices. Employers offering minimum essential coverage do not owe any Section 4980H(a) penalty. Employers not offering minimum essential coverage do not owe any Section 4980H(b) penalty.

For coverage year 2017, the 4980H(a) penalty is $2,265 per full-time employee (the first 30 full-time employees are exempt) on the payroll during the coverage year, prorated by month. The 4980H(b) penalty is $3,398 for each full-time employee that appears on the FFM notice, capped at $2,265 per full-time employee on the payroll during the coverage year.[7] Neither penalty is deductible from the employer's business-income tax, which makes it more expensive than the same dollar amount paid as

[4] U.S. Department of Treasury, Internal Revenue Service (2017). The FTEs are calculated on business days and special provisions are made for seasonal employees. Employees are aggregated across companies with common ownership (Section 4980H(c)(2) of the Internal Revenue Code, as amended by the ACA).

[5] Section 4980H(c)(2)(E) of the Internal Revenue Code, as amended by the ACA, says that the conversion factor from part-time employees to full-time employees is the ratio of the former group's monthly work hours to 120. For example, if February had exactly four work weeks, then every employee working 15 hours per week would count as one half of a full-time equivalent for the month of February.

[6] Presumably, the IRS could be using Form 941 filings to help identify large employers.

[7] Both penalties are indexed for nationwide health-cost inflation.

employee salary. Table 1 shows how the salary equivalent of the Section 4980H(a) penalty, hereafter referred to as "the employer penalty," is $3,449 for an employer paying business-income tax at a 39 percent marginal rate in 2017. Hereafter I refer to the amount of the employer penalty in terms of a salary equivalent.

Ignoring FFM notices for the moment, the employer penalty adds an extra marginal employer cost to having full-time employees during the coverage year, which, in 2017, is the minimum of $3,449 and the cost of offering affordable coverage to the employee.[8] The same penalty also creates a cost of having more than fifty FTE employees in the year prior to the coverage year. In particular, the prior-year hire that triggers the large-employer designation – puts FTEs above 50 – costs as much as $68,987 in addition to the usual salary and benefits for that person.[9] The large-employer designation costs less than $68,987 to the degree that his FTEs include plan-ineligible employees, such as part-time workers or new hires that spend parts of the year in employee-orientation or plan-waiting periods, or that the business faces a marginal income tax rate less than the 39 percent rate used in Table 1.

At first glance, it might appear that the true marginal cost associated with the large-employer designation is less because an employer hiring the 50th FTE during the coverage year could get "lucky" and have no full-time employees show up on the FFM notice (to be delivered in the year after the coverage year). But in that contingency there is a higher marginal cost of the 51st FTE because the 51st may be the person who appears on an FFM notice, thereby triggering a penalty for up to 21 full-time employees rather than just 20.[10] For the purposes of this paper, it is worth noting that FFM notices to some degree smooth out the threshold effect and put somewhat more weight on full-time employment than part-time employment, even for the purposes of the large-employer designation.

[8] The cost of offering coverage is more accurately understood as the lost employer-employee surplus, if any, from not having the option of having cash compensation instead of health insurance.

[9] $68,987 is twenty times the penalty's $3,449 salary-equivalent because a business with 50 full-time employees has 20 more penalties than a business having 49 full-time employees and zero part-time employees.

[10] This combinatorial phenomenon is closely related to "gambler's ruin:" getting "lucky" (no FFM notice) on the n^{th} FTE raises the cost of getting unlucky on the $(n+1)^{st}$.

The Small Employer Health Tax Credit is based on employer size but, unlike the employer penalty, it does not have a sharp size threshold because the credit is phased out continuously with size (between 10 and 25 FTEs) and with average annual employee wage (between about $26,000 and $52,000) (United States Government Accountability Office 2012, Table 2).[11] Moreover, credit participation has been reported as "limited"; this paper has some new data to contribute on this point (see Appendix I).

III. Modeling the distribution of labor-market outcomes

The structure of the employer penalty potentially causes businesses that would otherwise be designated as large businesses (50 or more FTEs) to keep their employment below the threshold. A simple cost-function analysis shows how, in theory: (i) the ACA penalty creates this incentive; (ii) compliance – that is, offering ESI – is nonmonotonic with employer size around the threshold; and (iii) the mass of firms below the threshold are a mix of those that would and would not offer ESI absent the ACA.

III.A. The costs of compliance and penalty avoidance

Each employer has an efficient size ν, measured as FTEs. Its actual size, also measured in FTEs, is n and its associated costs are $f(n-\nu)$, where f is a concave function having its minimum at $n - \nu = 0$.[12] The employer can offer ESI at cost $\delta(\nu)$, net of the willingness of employees to pay for that coverage via less cash compensation. δ presumably varies across employers, even conditional on ν. It can be negative, in which case the joint surplus of the employer and employee (including any pre-ACA income-tax advantages) is enhanced when coverage is offered. δ also includes administrative costs and insurance-premium loads, and the scale economies often present on these types of costs suggest that: (a) δ and ν would be negatively correlated across employers and (b) larger employers are more likely to offer ESI. Item (b) has been frequently observed

[11] In using the descriptor "continuously," I ignore the fact that sometimes the IRS instructs taxpayers to round various credit determinants to the nearest integer.

[12] For example, ν could represent the minimum of a firm-level average cost curve $f(n-\nu)$, as in Viner (1932).

(Henry J. Kaiser Foundation and Health Research & Educational Trust 2012) and is confirmed in this paper's new data.

Absent the ACA, the firm's only costs are $f(n-\nu) + \delta(\nu)ESI$, so that cost-minimizing FTEs is $n = \nu$, and the cost-minimizing offer decision is simply the indicator of whether $\delta < 0$. Because the $\delta < 0$ businesses offer ESI even without the ACA, they might be considered voluntary compliers with the stated purpose of the ACA's employer mandate. The $\delta > 0$ businesses do not voluntarily comply: they do not offer ESI without an additional pecuniary incentive.

With the ACA, there are two additional costs to consider: the employer penalty $L(n)(n-30)\tau_n$ and an additional cost of ESI, $\tau_e n$:

$$c(n, ESI; \nu, \delta) = f(n-\nu) + (1-ESI)L(n)(n-30)\tau_n + (\delta(\nu) + \tau_e n)ESI \qquad (1)$$

$L(n)$ is an indicator for large-employer status ($n \geq 50$). τ_n would be \$3,449 for an employer with no part-time employees; the static model here ignores the distinction between coverage year and prior year and does not account for zero marginal penalty for large employers that nonetheless have fewer than thirty full-time employees.

The constant $\tau_e > 0$ multiplies n, representing an impact of the ACA on the supply of workers to employers offering ESI. For example, households that are otherwise eligible for exchange subsidies are less willing to supply labor to firms offering coverage. Even without subsidies, exchange coverage is a health insurance alternative to ESI that is created by the ACA. The ACA's additional regulation of employer plans may also discourage ESI. τ_e would be negative if the individual mandate were encouraging households to supply labor to ESI firms rather than non-ESI firms (e.g., the individual mandate and the perception that exchange coverage is a poor substitute for ESI may push households in that direction). Also note that, unlike τ_n, part of τ_e could be a marginal cost to an industry without affecting the size of suppliers within that industry because it causes suppliers to exit. A fuller analysis would also consider the decision to split a larger business into multiple small ones and give more emphasis to the case in which the shift of labor supply away from ESI employers was greater in magnitude than τ_n, but for

simplicity I keep the number of businesses constant and give most of the attention to the case in which τ_e is less than τ_n.[13]

When not offering ESI, the cost function is discontinuous in FTEs at the $n = 50$ threshold between small and large businesses, where it jumps by $20\tau_n$. Businesses not offering ESI that would otherwise be large can sharply reduce their costs by cutting their employment below the threshold. Moreover, because $\tau_e > 0$ by itself raises the cost of ESI, some businesses that would be large *and* offering ESI but for the ACA may be induced by the law to drop ESI and reduce FTEs below the threshold. I refer to either type of business as a "49er" because 49 is the largest integer number of FTEs that is below the $n = 50$ threshold.[14] By this definition, 49ers are not offering ESI under the ACA.

III.B. The propensity to comply by size of business

Presumably, 49er businesses are the ones with ν above but relatively close to 50. Therefore, this model predicts that the ACA can increase the ESI propensity of businesses with FTEs above but close to fifty for two reasons: $\tau_n > 0$ reduces the cost of ESI for large business *and* $\tau_n > 0$ eliminates 49ers, who disproportionately would not be offering ESI absent the ACA, from the sample of businesses with FTEs above but close to fifty.

On the other side of the $n = 50$ threshold, the ESI propensity is low for two reasons: $\tau_e > 0$ increases the cost of ESI *and* the introduction of the 49ers that, by

[13] Although τ_e represents differential supply of labor to ESI firms, nothing in the model (1) represents the impact of the ACA on overall labor supply incentives. The model also fails to represent changes in the composition of demand among various types of employers as a consequence of the ACA costs they differentially experience and pass on to their customers. Mulligan (2015b) shows that the overall labor-supply incentives are in the direction of less labor supply; Gallen and Mulligan (2013) look at, among other things, the composition of demand. This paper's applications of the model (1) should be interpreted as measuring some of the employment effects holding constant the composition of demand and the willingness to supply labor to nonESI employers. As noted, this paper also neglects employer exit or entry.

[14] I do not assume that a 49er business has exactly 49 FTEs because employers may run discrete shifts or locations and therefore maintain a workforce in multiples of, say, 4. Also note that many businesses with less than 50 FTEs are not 49er businesses by my definition, because they would have fewer that 50 FTEs even if they were not trying to avoid employer-penalty assessments.

definition, would otherwise be large businesses. If we assume that 49ers have ν greater than but close to 50 FTEs and ultimately have n less than but close to 50, then the ESI propensity is nonmonotonic in size: it is especially low just below $n = 50$ and especially high just above it. This pattern is obvious in my data, as will be shown below.

In addition to the two types of 49ers, seven other types of responses to the ACA are possible in this model: (1) small businesses with no response in employment or ESI offering; (2) small businesses that keep employment constant but drop ESI due to $\tau_e > 0$; (3) small businesses that add ESI and reduce employment due to the marginal cost of employment $\tau_e > 0$;[15] (4) small businesses that keep ESI but reduce employment due to the marginal cost of employment $\tau_e > 0$; (5) relatively large businesses that marginally reduce employment due to the marginal cost $\tau_n > 0$, but still staying above the threshold, and not offering ESI; (6) large businesses that are induced by the ACA to offer ESI but also marginally reduce employment; and (7) large businesses that offer ESI regardless of the ACA and marginally reduce employment due to $\tau_e > 0$.

IV. Survey Design

I estimate the national number of 49ers using a small-business survey that was conducted by Hanover Research for the Mercatus Center at George Mason University, hereafter "the Mercatus-Mulligan survey." Hanover was instructed to survey managers or owners employed full-time at a business that existed in both 2016 and at the time of the survey (the week of March 13–17, 2017) and had between 2 and 199 full-time employees. The survey respondents must, at the time of the survey, have a role in the businesses' hiring and employee-benefit decisions. The sampling began by identifying members of a verified-respondents panel whose personal information indicated that they likely fit the required respondent profile.[16] A random sample of identified panel members was invited by email to participate in the survey and receive a reward for

[15] When offering ESI, the cost function is continuous in FTEs with a single minimum. The ACA reduces the cost-minimizing n (ESI = 1) to the extent that $\tau_e > 0$.
[16] For example, the respondent is employed in the occupation of manager.

completion. A survey was terminated early, and any responses excluded from the sample, if responses to one of the first eight questions indicated that the respondent did not fit the aforementioned profile.[17] Hanover further excluded about 15 percent of respondents from its final sample of 745 because the respondent: (i) completed the survey too quickly, (ii) flat or straightlined through the responses (e.g., always chose answer "A") or (iii) gave nonsense answers to the open-ended questions. Respondents provided their answers online at their convenience (typically in the early evening) and were permitted to take a long pause during their survey. Including the long pauses, the median (average) survey duration was 13 (26) minutes, respectively. The sampling was stratified between business sizes 2-49 and 50-199: in principle, invitations to one of the strata would cease if that strata were significantly larger than the other. However, in this survey no action was taken to rebalance the strata because the two were of similar size throughout the survey week.[18]

Respondents appeared to work or reside in 47 states plus the District of Columbia.[19] They worked in a variety of industries, as shown in Appendix I. Almost exactly equal numbers of respondents indicated that they more frequently vote Democrat versus Republican. Hereafter, I use "respondent" to refer to either the individual employee that completed the survey or the entire business.[20]

I also note that, because the survey was individual-based, a business' probability of inclusion in the sample increased with the number of employees it had fulfilling the respondent criteria. To estimate an employment-weighted average for the national population of businesses, I therefore take the corresponding unweighted average in the Mercatus-Mulligan sample. To estimate an average for the business population, I take weighted sample averages, where the weights are the inverse of the sample businesses' total employment. The former case is illustrated in Figure 2, which shows the fraction of aggregate small-business employment in each business-size category (classified by total

[17] Appendix I shows the questionnaire and the number of respondents that exited the survey early for failing one of the profile requirements.
[18] The final sample had 415 respondents from businesses with 2-49 full-time employees and 330 respondents from businesses with 50-199.
[19] Location is derived from the respondent's connection to his internet service provider. Note that respondents were able to participate in the survey via mobile devices. Two of the 745 ISP locations were outside of the United States.
[20] 8.2 percent preferred not to indicate party affiliation. 1.2 percent were not registered to vote.

employment in 2016) in our sample and compares it to the national distribution in 2014, which is the most recent year available.[21] The Mercatus-Mulligan series shown in Figure 2 is just the unweighted sample frequency whereas the Census-Bureau series is taken from its employment table rather than its business-count table. Further discussion and illustrations are provided in Appendix I.

V. Estimates of the number of 49ers created by the ACA

The Mercatus-Mulligan survey separately measured firm-level full-time and part-time employment, as defined by the ACA, for calendar year 2016. They were measured in brackets: 0, 1-4, 5-9, 10-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-49, 50-74, 75-99, 100-49, 150-99, and 200+.[22] Full-time employment was also measured at the time of the survey (March 2017). These brackets were finer than those available from MEPS-IC public tabulations (recall Figure 1), but even so total employment and full-time equivalent employment can therefore only be approximated.

V.A. Before-after estimates from total employment measures

The Mercatus-Mulligan survey does not measure employment before the implementation of the employer mandate. Using the survey as part of a before-after estimate of the number of 49er businesses therefore requires combining it with earlier and comparable data on the size distribution of small businesses. The Census Bureau's business survey of 2012 is one such survey, because it uses firm-level size bins although it measures total employment rather than FTEs or their components.[23]

[21] The purpose of Figure 2 is not to offer a before-after estimate (such estimates are discussed in Section V.A) but rather to assess whether, away from the threshold, the MM survey methodology skews the size-distribution findings. This purpose is why Figure 2 (a) takes the year most recently available from the Census Bureau (2014) and (b) combines the 40-49 bin with the 50-74 bin.

[22] Recall that the survey has no businesses with zero or one full-time employees and no businesses with 200 or more full-time employees; these brackets are relevant for part-time employment.

[23] The Census Bureau provides separate counts of "establishments" and "firms"; I use the firm counts. Mercatus-Mulligan survey does not contain these terms (with one exception on page 18 where "firm" is used); it refers to the sample respondent's "company."

Appendix I shows that there is not a noticeable change in the size distribution if the 40-49 bracket is combined with 50-74. However, the 40-74 total employment bracket has become more intensive in businesses with 40-49 employees. The Mercatus-Mulligan sample-share point estimate is 0.45, which is remarkably greater than 0.37 for 2012.[24] This is essentially the same result as Figure 1's MEPS-IC before-after result, except with different source data that has finer size bins.

Because any business with at least one part-time employee has total employment greater than its FTEs, an employer can change from large to small by the ACA's definition without going below 50 total employees. In other words, a 49er business is by definition to the left of the 50-FTE threshold even though it can be on either side of the 50-employee threshold. The 49ers to the right of that threshold do not affect the amount of employment at businesses with fewer than 50 total employees except to the extent that the workers who are let go (or not hired) are absorbed by a business that does have less than 50 total employees. If we had an estimate of the impact of the employer mandate on the amount of employment by businesses with, say, 40-49 employees, that would be a lower bound on prevalence of 49er businesses as measured by their combined employment.

The first row of Table 2 shows estimates of this type derived from the Mercatus-Mulligan/Census-Bureau comparison above (first column) and from the MEPS-IC (second column). The first column takes the Mercatus-Mulligan estimate of national employment by businesses sized 40-49 and subtracts what it would have been if it had grown from its level in 2012 (as measured by the Census Bureau) at the same rate as national payroll employment (7.6%), with a result of 636,842 extra employees. If we attribute these extra employees to 49er businesses with less than 50 employees, and they average 40 employees each, then there were 15,921 49er businesses with less than 50 employees in 2016. The second column repeats the exercise with the MEPS-IC, but using the 25-49 bracket and comparing 2015-16 to 2013-14.

[24] Specifically the 0.37 share is calculated as the 2012 national number of employees in businesses sized 40-49 (2.8 million) divided by the number in businesses sized 40-74 (7.6 million). I simulated a bootstrap distribution of that share from the MM sample in order to quantify how likely sampling error would explain the gap between the Census Bureau and MM share estimates. Only 2.8 percent of the bootstrap samples have a share as small as the 2012 share from the Census Bureau, which means that sampling error is an unlikely explanation.

The estimates in the top panel of Table 2 have a couple of potential sources of error. One is that the total employment data do not show exactly what 40-49 or 25-49 employment would have been without the employer mandate and therefore do not show the exact impact of the mandate on employment in the categories. Even if we knew the impact on employment in those categories, it would be different from the employment of the 49er businesses because the employer mandate presumably has a nonzero effect on the employment of, say, businesses sized 40-49 that are not 49er businesses. I interpret that top panel as an order-of-magnitude check on what this paper's cross-sectional estimates show.

Because most small businesses have part-time employees, there are likely more 49er businesses with 50+ employees than with less than 50. Estimating the number of 49er businesses having at least 50 employees is, with these data, even more difficult because (i) those businesses do not change total-employment categories, (ii) the two types of 49ers have offsetting effects on average employment of the 49er businesses with at least 50 total employees.[25] The middle panel of Table 2 reports how much extra the businesses sized 50-99 would have to hire in order for employees per business in that group to either have increased from 2013-14 at the same rate as the entire labor market (Assumption A) or at a zero rate (Assumption B).[26] The extra employees reflect the activities of both types of 49ers as well as the activities of the non49er businesses in the 50-99 size category. The smaller 49ers presumably would have had fewer employees than the average business size 50-99, and thereby raise the average by leaving the category. The non49ers may also be reducing average employees per business because the employer penalty is a tax on full-time employment. If these two cancel, then the entries in the middle panel of Table 2 are estimates of the aggregate number of positions removed by the 49er businesses that have at least 50 employees. If we further assume that the average 49er business with at least 50 employees reduced employment by 10, then we can divide by 10 to get estimates of the number of 49er businesses that have at least 50 employees.

[25] The larger 49ers reduce the average because they remain a business in the 50+ category but reduce employment.

[26] These calculations are not attempted with Mercatus-Mulligan and the Census Bureau data because such calculations would be sensitive to small differences in how the two surveys define firms or employees.

Overall, these back-of-the envelope calculations with time series on total employment suggest that there are roughly 28,000 to 50,000 49er businesses, with roughly 9,000 to 16,000 of them having fewer than 50 total employees. As expected, 49ers are difficult to detect with total employment measures.

V.B. Estimates using compliance rates

An accurate assessment of the impact of regulation on the size distribution of businesses requires size measures that closely approximate how size is measured by the regulation, which in the case of the ACA is FTEs. Even with FTE measures, detecting an economically meaningful number of 49er businesses – say, ten percent of the all businesses that would otherwise have 50-74 FTES – is a statistical challenge because the mandate presumably does not bind for the majority of business that would offer health insurance coverage regardless of the mandate. These challenges have been cited in previous research the effect of regulation on the size distribution of businesses (Gourio and Roys (2014) and Garicano, Lelarge and Van Reenen (2016)).

The Mercatus-Mulligan survey has an advantage in measuring voluntary compliance. Table 3's top row shows that 64 percent of small businesses were offering ESI at the time of the survey. Weighted by employment, the percentage is 74. The bars in Figure 3 display the propensity to comply by business size, measured as the bracketed number of full-time employees at the time of the survey. Compliance includes voluntary compliance, that is, any business that offers health insurance coverage to its employees even though it is exempt from the mandate. Notice how the compliance propensity dips sharply between 30 and 49 full-time employees. The tallest bar in the chart is the one that begins at 50 full-time employees.

Even without the ACA, the propensity to offer ESI is expected to increase with business size. I adjust for this by counting the number of other fringe benefits that each sample respondent offers.[27] As shown by Figure 3's solid series, this number is a smoother function of business size and increases with size in almost every instance.

[27] By using such a measure, I fail to detect those businesses that are 49ers because their cost of offering fringe benefits is generally high. The other fringe benefits are: 401K matching, dental

Figure 3's pattern can be detected in a regression framework by regressing an indicator variable for ESI on indicator variables for the size brackets between 30 and 49, the number of other fringe benefits, the business' median annual salary of non-management full-time employees, and industry indicator variables. As shown in Table 4's ordinary least squares (OLS) column, the indicator coefficients range from –0.12 to –0.20, which is about the dip shown in Figure 3.

The other-fringes variable is economically and statistically significant. The interquartile range for that variable is 4, which by itself explains twenty percentage points of ESI propensity. As shown in Figure 3, twenty percentage points is comparable to what can be explained with business size. This result is probably unsurprising because both employer and employee characteristics pushing toward ESI (business size, employee-family situations, etc.) tend also to push toward offering other fringe benefits.

The OLS coefficients on size still do not fully reflect the prevalence of 49ers because some of them might have had fewer than 50 *full-time* employees even without the ACA. The ideal size regressor would be an indicator of having 30-49 FTEs, with no measurement errors. It is only possible with the MM survey to measure a probability that a respondent has 30-49 FTEs, which can differ from zero and one (and thereby imperfectly measuring the ideal) because the numbers of full- and part-time employees are measured in brackets that contain more than one integer. The remainder of Table 4 therefore addresses the measurement error by using instrumental variables for the probability measure.[28]

The probability (of having 30-49 FTEs) measure is assigned to each business based on their brackets for full- and part-time employment. The probability assignment is done in three steps: (i) assigning a probability of each integer number of full-time employees 10, 11, … 199 from the reported bracket and assuming that size is distributed

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insurance, paid maternity/paternity leave, short-term disability, long-term disability, life insurance, commuter benefits, and childcare benefits.

[28] The exclusion-restriction requirement of such an instrumental variable is that, conditional on the other regressors, it be uncorrelated with the measurement error, which in this case derives from the fact that full- and part-time employees are measured in brackets that contain more than one integer. This restriction is not testable with my data, but in principle other data with finer measures of the two employment types could be use to test the restriction and, if rejected, assess the direction and magnitude of the bias introduced.

Pareto within brackets,[29] (ii) assigning a probability of each integer number of part-time employees 0, 1, … 249 from the reported bracket and assuming that size is distributed Pareto within brackets, (iii) forming a joint distribution by assuming within-bracket independence between full- and part-time employment. Assuming each part-time employee is 2/3 FTE, the joint distribution assigns each sample respondent a probability of FTEs in the interval [30,50). See Appendix II for additional details.

The probability is then used as a regressor in the ESI equations, using full-time employment bracket indicators as instrumental variables. The two-stage least squares estimates are shown in the second column of Table 4. The estimated coefficient on the probability variable is –0.267, which suggests that businesses with 30-49 FTEs are 26.7 percentage points less likely to offer ESI, holding constant the other regressors. This is almost twice as much as the coefficients shown in the OLS column, which is expected given that full-time employment is not the same as FTEs and the latter is what designates an employer as large for penalty purposes. Either of these is suggesting that, weighted by employment, businesses with size close to, but below, the threshold are 12-27 percent less likely to be offering coverage. I interpret these extra non-ESI employers as the 49ers.

Although not shown in the table, the coefficient on the probability variable would, transformed to a marginal effect at the sample means, also be –0.27 if the second column were estimated as a probit rather than a linear probability variable. Results are similar if the dental benefit is omitted or entered separately from the other non-ESI benefits (third and fourth columns of the table). The probability variable's coefficient is somewhat closer to zero if 2016-size indicators are also used in the first stage regression (see the TSLS2 column). The TSLS3 column shows no statistically significant effect when the only first-stage size indicators are from 2016, and the point estimate is about one third of what it is with TSLS1. As the reader might guess from Figure 3, results are quite different if a threshold of 75 or 100 is used instead of 50, which is to be expected because the ACA's threshold is 50 rather than 75 or 100.

As discussed in Section II, the FTE threshold applies in the calendar year prior to the coverage year. For this reason, my preferred specifications measure ESI at the time

[29] The cross-bracket data and estimates are shown in Appendix II.

of the survey (March 2017) and relate it to the FTE threshold in the prior calendar year (2016). At the same time, measurement error in the probability variable and its ingredients (e.g., respondents have imperfect recall or interpret the meaning of the workforce question somewhat differently than the ACA measures the FTEs) suggests that its ingredients should not be used to predict it in the first stage regressions. This is the reason why Table 4's TSLS1 specifications exclude the 2016 full-time indicators, except as ingredients to constructing the probability variable.[30]

Table 5 shows the arithmetic for translating the regression coefficient into an estimate of the national total number of 49er businesses, regardless of whether their total employment is more or less than fifty. Limiting the Mercatus-Mulligan sample to 5-199 total employees, the sample average probability variable is 0.141 as shown in row (2). The 2014 Census Bureau data, scaled to 2016 using national payroll employment over that period, suggests that there are 44 million people nationally who worked in 2016 for employers sized 5-199 (total employment). Multiplying the two, we have about 6 million people nationally who worked for employers with 30-49 FTEs (row (6)). Interpreting the coefficient of –0.267 (second column of Table 4) as indicating 49ers, that makes 1.7 million employees at 38,327 49er businesses nationwide. Table 5's 38,327 bottom line is fairly consistent with the rougher before-after estimates shown in Table 2.

V.C. ESI transitions

Table 3 shows that it was uncommon for businesses to be without ESI in both 2013 and at the time of the survey. With this much ESI-status transition, not to mention size transition, we expect 2016 or time-of-survey size to poorly predict ESI in 2013. The final three columns of Table 4 confirm this, although perhaps it is surprising that the probability-variable point estimates are not negative as in the table's previous five columns.

[30] For each of the first stages of Table 4's TSLS1 and TSLS2 specifications, the F-test on the joint hypothesis that the three time-of-survey full-time indicators have zero coefficients has a p-value less than 0.001. Also note that, for a regression of ESI on the exogenous variables for the TSLS3 specification, the F-test on the joint hypothesis that the three *2016* full-time indicators have zero coefficients has a p-value of 0.48. These results are consistent with the hypothesis that 2016 full-time employment is measured with more error than time-of-survey full-time employment.

Table 3 shows that it was rare for small businesses to add ESI in the six months prior to the survey.[31] It was more common to drop ESI in that timeframe. Table 4's final column suggests that dropping ESI is especially common for businesses with between 30-49 FTEs in 2016. Indeed, if we compare that column's probability-variable coefficient with the second column, it suggests that more than half (16.8 of 26.7) of the extra non-ESI businesses of that size recently dropped their ESI. This is consistent with the hypothesis that a number of businesses that would have been close to, but above 50 FTEs are induced by the ACA to both (a) drop ESI – doing so permits their employees to receive exchange subsidies – and (b) reduce their employment in order to avoid the employer penalty.[32]

V.D. Employer reports about the ACA's effect on their hiring

The above results indicate that businesses near the 50-FTE threshold and not voluntarily offering ESI were reducing their hiring in order to avoid being penalized for failing to offer ESI. We can also check whether the managers at these businesses describe their hiring practices as responding to the ACA in this way, because survey respondents were asked how "employment practices changed at your company as a result of the ACA." They were given multiple answer choices, and could chose more than one.

For the purposes of regression analysis, I summed indicators for the replies "Yes, we are reducing hours for new employees," "Yes, we are reducing hours for existing employees," "Yes, we are hiring more employees at part-time status rather than full-time status," or "Yes, we are hiring fewer employees." I also formed an indicator variable as

[31] If ESI is offered on a calendar-year basis, then adding or dropping in the six months prior to the survey means that the plan began on January 1, 2017 or ended on December 31, 2016, respectively.

[32] As answers to an open-ended survey question about how the ACA affects their ESI offering, employers wrote things like "Sometimes the employees don't want the private medical care because they want to use Obamacare instead of paying a private one," and "Employees at my company are not eligible to apply for plans offered through the Marketplace because my company offers insurance coverage."

the disjunction of these four answers. The overall sample means of the counting and indicator variables are 0.46 and 0.34, respectively.[33]

Table 6 is much the same as Table 4, except in using these two reduced-hiring measures as dependent variables. The coefficients on the FTE-probability variables are economically and statistically significant. In other words, businesses just below the 50-FTE threshold are disproportionately reporting that the ACA caused them to reduce hiring.

V.E. The number of positions absent from 49er businesses

The national number of positions absent from 49er businesses is the product of the number of 49er businesses and the average number of extra positions that 49er businesses would have had but for the ACA. Without more information on how 49ers are formed – e.g., how the cost function (1) varies across businesses and whether (and why) a 49er business might choose a number of FTEs strictly less than 49 FTEs – the Mercatus-Mulligan sample is not well suited to estimate the latter. Table 7 therefore allows the reader to make an educated guess as to the average number of FTEs absent among 49ers and then lookup a national number of positions absent. At an average of 6 FTEs per 49er, that makes roughly 250,000 positions eliminated nationwide at 49er businesses. At 10 FTEs per 49er, that is about 400,000 positions.

Three external pieces of evidence suggest that the average number of absent FTEs per 49er exceeds three or four, and could be as great as ten. First, most "49er" businesses must have strictly fewer than 49 FTEs, because businesses with exactly 49 FTEs are too difficult to detect with the total employment data (recall Figure 1). Second, assuming that the distribution of FTEs but for the ACA would have been smooth, there are too many 49er businesses for all of them to have had exactly 50 or 51 FTEs but for the ACA. Otherwise, but for the ACA, there would be an extraordinary pile of businesses at 50 and 51 FTEs.

[33] 44% of respondents said that the ACA did not change their employment practices. 4% said that they did not know the effect of the ACA on employment practices. The most common response (25% of the full sample) among the remaining was that weekly hours were being reduced.

Third, recall that Table 2 also has estimates of aggregate positions eliminated by 49er businesses. Based on the MEPS-IC, Table 2 shows that 192,657 fewer employees are found in 2015-16 in businesses sized 50-99 than would be found if those businesses had the same average employment as in 2013-14 (Assumption B). The total is 399,158 if average employment had grown in proportion to the total labor market (Assumption A). Note that these totals exclude the 49ers that have total employment less than 50, although I suspect that they are less numerous than the 49ers with 50 or more. The totals also include large businesses that marginally reduced their employment due to the penalty. With those caveats, we can estimate the average number of positions eliminated by 49ers by dividing Table 2's middle panel aggregates by the number of 49er businesses with more than 50 employees. If that number is 20,000, then the average positions eliminated ranges from 10 (Assumption B) to 20 (Assumption A). At 40,000 businesses, the average positions eliminated ranges from 5 to 10.

Alternatively, we can directly estimate the aggregate number of positions eliminated with Table 2's aggregates (middle panel). In other words, the MEPS-IC data suggest that 49er businesses eliminated between 192,657 and 399,158 positions, plus all of the positions eliminated by 49er businesses with less than 50 total employees, minus the positions eliminated by large employers. This range consistent with the roughly 250,000 positions suggested by the MM sample.

The elimination of 250,000 positions from 38,327 businesses is economically significant. Note that about 82,000 employers had 50-74 employees in 2014, and another 40,000 had 75-99 employees. About 5 million people were employed in businesses sized 50-74, and 8 million people employed in businesses size 50-99. Presumably their number and collective employment would have grown about three or four percent like the aggregate labor market did. The MEPS-IC shows that the business size categories (by total employment) 50-99 and 100-999 actually grew at a significantly lower rate from 2013-14 to 2015-16 than did any of the other categories.[34]

250,000 positions are also significant by comparison with the scheduling effects of the ACA's employer mandate. Even and Macpherson (2015) and Dillender, Heinrich and Houseman (2016) independently find that the ACA's employer mandate resulted in

[34] Recall that more than half of the 49ers are expected to be in the 50-99 total-employment category, even though they have less than 50 FTEs.

up to one million positions being scheduled as part time (less than 30 hours per week) rather than full time. If that result came from, say, reducing 35-hour weekly schedules to 29 hours, that is the aggregate hours equivalent of eliminating about 170,000 positions.[35]

[35] Here each shift from full to part time is counted as 6/35ths of a position.

V. Conclusions

This paper reports the first results of a new survey of 745 businesses with 2-199 full-time employees and their hiring and compensation practices. The paper focuses on the question of how many businesses are small, by the legal definition, solely because of the Affordable Care Act's employer mandate: the 49ers. The stakes are large, because crossing the 50-FTE threshold from below, and without offering coverage, costs the salary equivalent of almost $70,000 per year in addition to the marginal employee's salary and benefits.

The paper uses three different methods to detect and begin to quantify the aggregate importance of this business-size distortion: before-after comparisons of business sizes, cross-section comparisons linked with employer benefit offerings, and employer descriptions of how the ACA affects their hiring. To my knowledge, this is the first paper to find a business-size distortion that is readily visible in aggregate U.S. data. It is also unique, relative to the international literature on business-size distortions, that the distortion can be linked to a specific regulation beginning in a specific year with a precisely known monetary penalty for violations.

Before-after comparisons between the Census Bureau business survey and the Mercatus-Mulligan survey (Table 2 and Section V.A) show little change in the size distribution of businesses between 2012 and 2016, except among businesses in the total-employment range 40-74. Among the latter businesses, the employment percentage of those with less than fifty employees has increased from 37 to 45, and this does not count the fact that a number of 49ers reduce employment below 50 full-time-equivalent employees (FTEs) without reducing their total employment below 50. Annual time series from the MEPS-IC (Figure 1) show an extraordinary jump in the employment percentage of those with less than fifty employees, beginning in 2015, which is the same year when the large-employer designation began its 50-FTE threshold.

The size distortion is closely linked with whether a business offers employer-sponsored health insurance (ESI) to its employees. Even by comparison with businesses employing fewer than 30 full-time workers, the propensity to offer ESI is low among

employers with 30-49 full-time employees. The size of this dip in the ESI propensity (Figure 3 and Table 4) indicates the prevalence of 49er businesses: they do not offer ESI and thereby keep employment low enough to avoid the ACA's large-employer designation. The cross-section finding is my second piece of evidence that the ACA's employer mandate is pushing a significant number of businesses below the 50-FTE threshold. Arguably it is the strongest evidence because of the difficulty of explaining such a substantial nonmonotonic firm-size pattern apart from the ACA's 50-FTE rule.

My point estimate is that the United States has 38,327 49er businesses that collectively employ 1.7 million people. This translates to roughly 250,000 positions that are absent from 49er businesses because of the ACA, but the Mercatus-Mulligan sample by itself is not well suited for accurately assessing the average number of positions that the 38,327 49er businesses eliminated. The sample also indicates that businesses continue to adjust their employment over time. For example, many of them reported that, because of the ACA, they hire fewer workers or at least fewer full-time workers, but tried not to adjust the situations of their existing employees. If the ACA and its employer mandate remains in place, perhaps the prevalence of 49er businesses will increase over time.

By definition, the 49er businesses have less than 50 FTEs and do not offer ESI. But it appears that a majority of them had been offering it in the prior year. Employers with 30-49 FTEs are also disproportionately likely to report that they hire less or have shorter work schedules because of the ACA (Table 6). This is my third finding pointing toward an economically significant effect of the ACA on the size distribution of businesses.

Individual-based surveys of businesses are rarely used in economics, but that is bound to change as the survey industry is becoming more efficient (i.e., cheaper for the researcher). It is worth noting the contrast between the Mercatus-Mulligan survey design and in-depth studies of a particular business (e.g., (Einav, et al. 2014, Handel and Kolstad 2015)). The former design has the advantage of representing a wide range of industries and geographic areas. Moreover, this study is not sponsored by any business and therefore does not require a corporation's approval for its release. Corporate approval is a concern for studies of a particular business, especially when the topic involves public-relations-sensitive issues such as distorting business practices to lessen the cost of well-

intended federal regulations. Another dividend from using a professional survey research firm is that every respondent completed the survey.

This paper does not put its estimates into an equilibrium framework.[36] Future research needs to estimate the number of eliminated positions at 49er businesses that resulted in jobs created at businesses that compete with 49ers in product or labor markets. To the extent that the employer mandate shifts employment from 49ers to other businesses, future research needs to assess the aggregate productivity loss from the shifts, recognizing that the ACA's large-employer definition is just a vivid example of a more general pre-existing enforcement phenomenon. Even without the ACA, businesses are taxed and regulated, and understand that adding to their payroll tends to increase the enforcement of those rules, albeit not discretely at 50 FTEs (Bigio and Zilberman 2011, Bachas and Jensen 2017). One ingredient in such productivity calculations would be the number of positions shifted, which I found to be roughly 250,000.

From the equilibrium perspective, another interpretation of my cross-section finding – the nonmonotonic relationship between ESI and employer size around the threshold – is that businesses below the threshold did not adjust their size but merely dropped their coverage, in which case, I have mislabeled them as 49ers. Indeed, I find that such businesses are disproportionately likely to have dropped their coverage in the past year. However, this alternative explanation does not by itself explain why (i) so many businesses were added to the 25-49 (total employment) size category, (ii) so few were added 50-99, or (iii) coverage rates are not particularly low for businesses with less than 30 FTEs.

The implementation of the employer penalty in January 2015 coincides with a sudden slowdown in the post-recession recovery in aggregate work hours per capita, with 2016 national employment about 800,000 below the trend prior to the implementation of the employer penalty (Mulligan 2016). This paper's estimates permit us to gauge the aggregate importance of the 49er phenomenon, not counting the marginal employment impact on non-ESI businesses that continue to employ 50 or more FTEs. *If* 250,000

[36] See Gallen (2013) for a model along these lines. Business entry and exit also need further consideration: they are not captured by the Mercatus-Mulligan survey, although they may be reflected in my Figure 1.

positions were the aggregate employment effect of 49ers (see the equilibrium caveat above), that would be about one third of the recovery slowdown.

Perhaps more important would be the social cost of adjustments around the threshold, which at first glance might seem small to the extent that some businesses react "merely" by, say, dividing their business in half so that each half has less than 50 FTEs.[37] The usual Harberger triangle welfare estimates allow for such reactions, because it assumes that businesses are heterogeneous in terms of their costs of avoiding the penalty. At one extreme, some businesses avoid the penalty at essentially zero cost because they were already on the margin between above versus below the threshold. But there are also other businesses near the other extreme, which is that the sacrificed value of surplus for employer and employee full offsets the amount of the penalty that they are avoiding. This triangle part of the welfare loss is therefore 38,327 businesses in the quantity dimension and up to $68,987 annually in the price dimension (about $1 billion annually). Even more important is the rectangle part of the welfare loss that comes from the fact that employment and income are substantially taxed by payroll, income, and sales taxes even without the ACA thereby creating a wedge between the positions' social and private values.[38] If that non-ACA wedge were $20,000 per position per year, that would be $5 billion of lost annual social value, plus the aforementioned welfare triangle.

[37] The ACA includes restrictions on subdividing businesses for this purpose, but the point here is just that businesses on the margin of adjustment are included in proper welfare calculations.

[38] That is, the marginal business that reduces employment or output at essentially zero private cost is still creating a significant social cost because taxpayers receive a part of the value it creates. To the extent that output or factor markets are not competitive, there is yet another rectangle to add due to the fact that employment and output are too low even without the ACA and without payroll, income, and sales taxes.

Appendix I. Further characteristics of the Mercatus-Mulligan sample

The sampling approach

Table 8 shows the frequency of the various sampling criteria that caused a respondent's survey to be terminated. From a sampling perspective, Hanover did not sample small businesses but rather (specific types of) employees at small businesses.[39] As compared to a sample of small businesses (say, by sampling from IRS tax returns), the Mercatus-Mulligan (MM) sample is more likely to include the larger of the small businesses. Conversely, a business-based sample is less likely to include an employee from the larger of the small businesses. Neither approach is "right" or "wrong", but the distinction must be acknowledged so that point estimates are properly weighted and that statistical confidence/credible intervals are calculated properly.

When the statistic of interest is the fraction of small-business employees in a given situation (e.g., employed by a business offering health insurance coverage), an employee-based sample like ours requires no weighting as long as it is representative of the employee population of interest. In contrast, a business-based sample would require weighting each business by the number of employees.

When the statistic of interest is the fraction of small businesses in a given situation (e.g., offering health insurance coverage), an employee-based sample like ours needs to be weighted by the inverse of the number of employees. A business-based sample would require no weighting, as long as it was representative of the business population of interest. The United States Census Bureau tracks all U.S. employers with Employer Identification Numbers, from which it calculates its "Statistics of U.S. Businesses (SUSB)." The SUSB is a good national benchmark for the MM sample, although its most recent release is for 2014. Figures 2 and 4b display the distribution of employees in businesses with 5-199 employees by size and industry, respectively, calculated from SUSB and from the MM sample.

[39] Figure 4a displays the job titles of the survey respondents.

As noted, unweighted shares in the MM sample represent employment-weighted shares of the small-business population. In order to project national employment totals from the MM sample shares, I follow the procedure from Table 5. Specifically, I first obtain the MM shares of businesses sized 5-199, in order to correspond with Census-Bureau size categories. I then multiply those shares by 2014 aggregate employment in businesses sized 5-199 (row (3) of Table 5), and then rescale to 2016 using national payroll employment in the two years (rows (4) and (5) of Table 5).

The national number of businesses is the ratio of the national number of employees to average business size. Average business size can be calculated from an employee-based sample like MM by calculating sample-average business size, weighted by the inverse of the size of the business (row (8) of Table 5 is an example).

Summary statistics

Table 3 displays the MM sample averages of offering and changing coverage. Table 5 row (2) shows the average propensity to have 30-49 FTEs in 2016. Table 9 displays additional sample summary statistics.

Participation in SHOP and the small business health care credit

The ACA created a health insurance marketplace for small businesses called the Small Business Health Options Program (SHOP). A business with fewer than 25 FTEs and participating in SHOP is potentially eligible for a tax credit for health insurance premiums paid on behalf of employees.[40] Measuring nationwide SHOP participation has proven difficult because SHOP enrollment can occur outside healthcare.gov. The recent

[40] United States Internal Revenue Service (2017). There are exceptions for Iowa and Wisconsin: "For calendar year 2015, SHOP Marketplaces in certain counties of Iowa did not have qualified health plans available for employers to offer to employees. Transition relief allows employers with a principal business address in the counties listed below to claim the credit for their tax year beginning in 2015. Certain employers with a 2015 health plan year that continues into 2016 can claim the credit for part of their tax year beginning in 2016… For calendar year 2016, SHOP Marketplaces in certain counties of Wisconsin will not have qualified health plans available for employers to offer to employees. Transition relief allows employers with a principal business address in the counties listed below to claim the credit for their tax year beginning in 2016."

Mercatus-Mulligan survey of small businesses in early 2017, projected to nationwide totals, shows about 150,000 businesses participating in SHOP with about 100,000 of them receiving the tax credit. Compare the 100,000 to more than 5 million businesses nationwide that have fewer than 25 employees.[41]

The United States Government Accountability Office (2016) reported 181,000 businesses claiming the tax credit in tax year 2014. Note that participation is expected to be less after 2015 because a business' eligibility is limited to two years; tax year 2016 was the first year that a small business could find itself ineligible for the credit solely because of participation in prior years.[42]

[41] Also note that adding an indicator for having the small business health credit as a regressor in Table 4's column (2) ESI regression has no effect on the coefficient estimated on the probability variable (–0.267).

[42] See also U.S. Department of Treasury, Office of Tax Analysis (2015, 2016), showing a sharp drop in the aggregate amount of the credit between fiscal years 2015 and 2016.



ACA IMPACT ON SMALL BUSINESS SURVEY

Prepared for Mercatus Center

May 2017

In the following survey design, Hanover Research seeks to uncover how hiring and benefits practices have changed among small businesses in the United States since the implementation of the Affordable Care Act in 2014.

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SURVEY QUESTIONNAIRE

SCREENERS

Hanover Research is conducting a brief survey of business decision-makers. This survey will take about 10-15 minutes to complete and your responses will remain strictly confidential.

Hanover Research is an independent market research firm based in Washington, D.C., and is in no way affiliated with any other entity or organization.

Please click below when you are ready to begin.

Q1.1 What is your employment status?
Terminate if not Full-time

- ❍ Full-time (30+ hrs/week)
- ❍ Part-time (Less than 30 hrs/week)
- ❍ Self-employed
- ❍ Unemployed
- ❍ Retired
- ❍ Student
- ❍ Other

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Q1.2 In which of the following industries do you work?

- ❍ Agriculture, Forestry, Fishing and Hunting
- ❍ Mining, Quarrying, and Oil and Gas Extraction
- ❍ Utilities
- ❍ Construction
- ❍ Manufacturing
- ❍ Wholesale Trade
- ❍ Retail Trade
- ❍ Transportation and Warehousing
- ❍ Information
- ❍ Finance and Insurance
- ❍ Real Estate and Rental and Leasing
- ❍ Professional, Scientific, and Technical Services
- ❍ Management of Companies and Enterprises
- ❍ Administrative and Support and Waste Management and Remediation Services
- ❍ Educational Services
- ❍ Health Care and Social Assistance
- ❍ Arts, Entertainment, and Recreation
- ❍ Accommodation and Food Services
- ❍ Other Services

Q1.3 Which of the following comes closest to your title?

- ❍ Business Owner or President
- ❍ C-Level (CEO, COO, CFO, etc.)
- ❍ Vice President or equivalent
- ❍ Director or equivalent
- ❍ Manager or equivalent
- ❍ Administrative support **Terminate**
- ❍ Other

Q1.6 In which of the following years was your company started?

- ❍ 2017 **Terminate**
- ❍ 2016
- ❍ 2014
- ❍ 2013
- ❍ 2012
- ❍ 2011
- ❍ 2010 or earlier

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Q1.7 In the following two questions, we ask you to think about full-time employees. For the purposes of this survey, full-time employees are those who work, on average, at least 30 hours a week.

Q1.8 In total, how many full-time employees does your company currently employ?

- ❍ Just myself **Terminate**
- ❍ 2-4
- ❍ 5-9
- ❍ 10-14
- ❍ 15-19
- ❍ 20-24
- ❍ 25-29
- ❍ 30-34
- ❍ 35-39
- ❍ 40-49
- ❍ 50-74
- ❍ 75-99
- ❍ 100-149
- ❍ 150-199
- ❍ 200+ employees **Terminate**

Q1.9 On average, how many full-time employees did your company employ in the year of 2016?

- ❍ Just myself **Terminate**
- ❍ 2-4
- ❍ 5-9
- ❍ 10-14
- ❍ 15-19
- ❍ 20-24
- ❍ 25-29
- ❍ 30-34
- ❍ 35-39
- ❍ 40-49
- ❍ 50-74
- ❍ 75-99
- ❍ 100-149
- ❍ 150-199
- ❍ 200+ employees **Terminate**

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Q1.10 On average, how many part-time employees did your company employ in the year of 2016?

- ❍ None
- ❍ 1-4
- ❍ 5-9
- ❍ 10-14
- ❍ 15-19
- ❍ 20-24
- ❍ 25-29
- ❍ 30-34
- ❍ 35-39
- ❍ 40-49
- ❍ 50-74
- ❍ 75-99
- ❍ 100-149
- ❍ 150-199
- ❍ 200+ employees

Q1.11 What is your role in making decisions regarding employee hiring and benefits?

- ❍ I have no role in this process **Terminate**
- ❍ I have a limited role in this process **Terminate**
- ❍ I help influence decisions regarding employee hiring practices and employee benefits
- ❍ I am part of a team that makes decisions regarding employee hiring practices and employee benefits
- ❍ I am solely responsible for making decisions regarding employee hiring practices and employee benefits

Q1.12 How long have you been in a position at your current organization where you have had at least some influence over decisions regarding hiring practices and employee benefits?

- ❍ Less than 6 months
- ❍ 6 months to 1 year
- ❍ 1 to 2 years
- ❍ 3 to 5 years
- ❍ Longer than 5 years

Q1.13 Approximately what is the median annual salary of a typical non-management full-time employee? Your best guess is fine. Please note that the scale is from $0-$100,000.

_____ Annual Salary ($000s)

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FORMER EMPLOYEES

Q2.1 Has your current organization hired any employees in the past 24 months?

❍ Yes

❍ No

Q2.2 Have you had any employees leave your current organization in the past 24 months? This includes employees who were fired, resigned, or retired from your company.

❍ Yes

❍ No

If Q2.2 = "Yes"

Q2.3 Thinking of those former employees who have left your company in the past 24 months who left for other employment opportunities, approximately what percentage went to the following types of employers? Please enter a percentage in each of the following boxes, making sure they add up to 100%. Please enter your best estimate for each of the following sources.

_____ Small business competitors (those with fewer than 50 employees)
_____ Medium business competitors (those with 50 to 199 employees)
_____ Large business competitors (those with over 200 employees)
_____ Non-competitive industries
_____ Other (please specify)
_____ I don't know

Skip if 2.3 "I don't know" = 100%

Q2.4 Thinking about the employers that your former employees went to, to the best of your knowledge, how many of these employers provide health insurance to their employees?

	None of them	Some of them	Most of them	All of them	I don't know
Display all options with 1% or more from Q2.3	❍	❍	❍	❍	❍

EMPLOYEE BENEFIT OFFERINGS

Q3.1 Now we'd like to ask you a few questions regarding your company's employee benefits structure. Please answer all questions truthfully and to the best of your ability; however, please do not hesitate to indicate if you do not know the answer to a specific question.

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Q3.2 Which of the following does your company currently provide as part of its employee benefits structure? Please select all that apply.

- ❑ Employer 401K matching
- ❑ Employer-sponsored health insurance through a private insurer
- ❑ Employer-sponsored health insurance through the SHOP exchange
- ❑ Vision insurance
- ❑ Dental insurance
- ❑ Paid maternity/paternity leave
- ❑ Short-term disability
- ❑ Long-term disability
- ❑ Life insurance
- ❑ Commuter benefits
- ❑ Childcare benefits
- ❑ Other (Please specify) _____

If Q3.2 "Employer-sponsored health insurance through a private insurer" AND "Employer-sponsored health insurance through the SHOP exchange" are NOT selected

Q3.3 How do employees at your organization primarily obtain health insurance?

- ❍ Through the local exchange
- ❍ Privately purchased individual health insurance
- ❍ Through a spouse or family member's employer
- ❍ Through Medicare or Medicaid
- ❍ Other (please specify) _____

If Q3.2 "Employer-sponsored health insurance through a private insurer" AND "Employer-sponsored health insurance through the SHOP exchange" are NOT selected

Q3.4 Has your company ever sponsored health insurance for its employees?

- ❍ Yes, within the last year
- ❍ Yes, one to two years ago
- ❍ Yes, three to five years ago
- ❍ Yes, more than five years ago
- ❍ No

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If Q3.3 = "Employer-sponsored health insurance through a private insurer" or "Employer-sponsored health insurance through the SHOP exchange"

Q3.5 How long ago did your company begin offering employer-sponsored health insurance to its employees?

Respondents do not see options which conflict with Q1.6

- ❍ Less than 6 months ago
- ❍ 6 to 12 months ago
- ❍ Between 1 and 2 years ago
- ❍ Between 2 and 3 years ago
- ❍ Between 3 and 5 years ago
- ❍ Over 5 years ago

Q3.6 Thinking about your own employer and its benefits offerings, which of the following influenced your organization's decision to offer these benefits, outside of any legal requirement to do so?

	Staying competitive with other companies which offer similar benefits	A sense of responsibility towards employees	Other factors	No reason other than a legal requirement to provide it
Carry forward selected responses from Q3.2	❍	❍	❍	❍

If Q3.6 = "Other" for "Employer-sponsored health insurance through a private insurer"

Q3.7 You indicated that other factors influenced your company to offer employer-sponsored health insurance. Please describe those other factors.

If Q3.6 = "Other" for "Employer-sponsored health insurance through the SHOP exchange"

Q3.8 You indicated that other factors influenced your company to offer employee subsidies for health insurance through the SHOP exchange. Please describe those other factors.

If Q3.2 = "Employer-sponsored health insurance through a private insurer" or "Employer-sponsored health insurance through the SHOP exchange"

Q3.9 How many times has your company changed its health insurance plan offered to employees in the past three years?

Respondents do not see options that conflict with Q1.6 OR Q3.5

- ❍ Once
- ❍ Twice

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- ❍ Three times
- ❍ More than three times
- ❍ Have not changed health insurance plan offered to employees in the last three years

See if 3.5 = "3 to 5 years ago" OR "Over 5 years ago" and If Q3.2 = "Employer-sponsored health insurance through a private insurer" or "Employer-sponsored health insurance through the SHOP exchange"

Q3.10 Is that more often, less often, or the same frequency that your company changed its health insurance plan offered to employees prior to the last three years?

- ❍ More often
- ❍ Less often
- ❍ The same
- ❍ Not sure

See if 3.5 = "3 to 5 years ago" OR "Over 5 years ago" and If Q3.2 = "Employer-sponsored health insurance through a private insurer" or "Employer-sponsored health insurance through the SHOP exchange"

Q3.11 In the last three years, what change have you noticed in the percentage of <u>new hires</u> enrolling in your company's employer-sponsored health insurance plans?

The percentage of new hires enrolling is...

- ❍ Increasing by a lot
- ❍ Increasing by a little
- ❍ Decreasing by a little
- ❍ Decreasing by a lot
- ❍ I have not noticed any change

See if 3.5 = "3 to 5 years ago" OR "Over 5 years ago" and If Q3.2 = "Employer-sponsored health insurance through a private insurer" or "Employer-sponsored health insurance through the SHOP exchange"

Q3.12 In the last three years, what change have you noticed in the percentage of <u>current employees</u> re-enrolling in your company's employee-sponsored health insurance plans?

The percentage of employees re-enrolling is...

- ❍ Increasing by a lot
- ❍ Increasing by a little
- ❍ Decreasing by a little
- ❍ Decreasing by a lot
- ❍ I have not noticed any change

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See if 3.5 = "3 to 5 years ago" OR "Over 5 years ago" and If Q3.2 = "Employer-sponsored health insurance through a private insurer" or "Employer-sponsored health insurance through the SHOP exchange"

Q3.13 In the last three years, what change have you noticed in the percentage of new hires and current employees enrolling their spouses and/or families in your company's employee-sponsored health insurance plans?

The percentage of employees enrolling their spouses and/or families is...

- ❍ Increasing by a lot
- ❍ Increasing by a little
- ❍ Decreasing by a little
- ❍ Decreasing by a lot
- ❍ I have not noticed any change

See if Q3.11 – Q3.13 = "Increasing by a lot" OR "Increasing by a little"

Q3.14 Please describe the impact this increase in enrollment rates has had on your company in your own words.

See if Q3.11 – Q3.13 = "Increasing by a lot" OR "Increasing by a little"

Q3.15 You indicated increased enrollment in your company's employee-sponsored health insurance plan. What kind of impact has this increase in enrollment rates had on your company's operating budgets?

- ❍ Very Negative
- ❍ Negative
- ❍ Neither Negative nor Positive
- ❍ Positive
- ❍ Very Positive

See if Q3.14 = "Very Negative" OR "Negative"

Q3.16 You indicated that increased enrollment in your organization's employee-sponsored health insurance plan has had a negative impact on your organization's budget. Which of

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the following has your organization done to overcome this negative impact? Please select all that apply.

- ❑ Switched to a lower cost plan with fewer benefits
- ❑ Required employees to pay more towards their health insurance
- ❑ Dropped group coverage
- ❑ Raised prices for your goods or services
- ❑ Cut employee bonuses
- ❑ Cut wages for new employees
- ❑ Cut wages for existing employees
- ❑ Cut other benefits (please specify) _____
- ❑ Other (Please specify) _____
- ❑ Nothing

Q3.2 = "Employer-sponsored health insurance through a private insurer" or "Employer-sponsored health insurance through the SHOP exchange"

Q3.17 What percentage of your organization's employees are insured through your company's health insurance?

_____ % Enrolled **(Slider scale, 0% to 100%)**

Ask if Q3.17 is <100%

Q3.18 Thinking about those employees who are not currently insured through your company's health insurance, approximately what percentage are insured through other sources?

- ❍ % insured privately _____
- ❍ % insured through Medicare _____
- ❍ % insured through Medicaid _____
- ❍ None
- ❍ I don't know

Seen if currently employ 20 or more employees and If Q3.2 = "Employer-sponsored health insurance through a private insurer" or "Employer-sponsored health insurance through the SHOP exchange"

Q3.19 Have any former employees at your company qualified for a continuation of their health benefits through your company? This could be due to retiring employees or those qualified through the Consolidated Omnibus Budget Reconciliation Act (COBRA).

- ❍ Yes
- ❍ No
- ❍ I don't know

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If Q3.19 = "Yes"

Q3.20 How many of those former employees who are qualified for a continuation of their health insurance choose to continue using your company's health insurance?

- ❍ 25% or less
- ❍ 26% to 50%
- ❍ 51% to 75%
- ❍ 76 to 100%

If Q3.19 = "Yes"

Q3.21 What type of change have you noticed in the rate at which former employees continue with your company's insurance in the last 3 years?

_____

NEW AND FORMER EMPLOYEE HEALTHCARE OFFERINGS

Q4.1 Thinking about your company's recruiting and hiring process, please indicate how heavily you rely upon the following sources for potential applicants to your company.

	Never rely on	Rarely rely on	Occasionally rely on	Moderately rely on	Rely on a great deal
External job-positing websites (e.g. Indeed, Monster, CareerBuilder, etc.)	❍	❍	❍	❍	❍
LinkedIn	❍	❍	❍	❍	❍
Glassdoor	❍	❍	❍	❍	❍
Campus recruiting	❍	❍	❍	❍	❍
Referrals	❍	❍	❍	❍	❍

Q4.2 What percentage of your new hires over the past 2 years have come from the following sources? Please enter a percentage in each of the following boxes, making sure they add up to 100%. Please enter your best estimate for each of the following sources.

_____ Local competitors
_____ National competitors
_____ Non-competing industries
_____ Graduate programs
_____ Undergraduate schools
_____ Other

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Q4.3 Thinking about only those employees that your company has hired since you've been in your current position, how knowledgeable are you about their previous health insurance coverage?

- ❍ Not at All knowledgeable
- ❍ Slightly knowledgeable
- ❍ Moderately knowledgeable
- ❍ Very knowledgeable
- ❍ Extremely knowledgeable

Hide if Q4.3 = "Not at All knowledgeable"

Q4.4 Please describe your employees' previous health insurance coverage. Be as detailed in your description as possible.

_____

ACA FAMILIARITY AND EXPERIENCE

Q5.1 How familiar do you consider yourself to be with the Affordable Care Act (ACA), also known as Obamacare, as it applies to your company's employer healthcare plan offerings?

- ❍ Not at All Familiar
- ❍ Slightly Familiar
- ❍ Moderately Familiar
- ❍ Very Familiar
- ❍ Extremely Familiar

Q5.2 In your own words, please describe the ways in which the ACA affects your employer healthcare plan.

_____

Q5.3 The Affordable Care Act (ACA) is a federal law passed in 2010. While there are many components to the ACA, this survey will focus mainly on two aspects: The Employer Mandate and the Health Insurance Exchange System.

Q5.4 How much research did you or your company do in order to determine how this law would affect your company?

- ❍ None at all
- ❍ Very little
- ❍ A moderate amount
- ❍ A lot

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Q5.5 Did your company hire an external advisor, separate from your benefits provider or broker, to help ensure it was complying with ACA regulations?

- ❍ Yes
- ❍ No
- ❍ I don't know

Hide if Q5.4 = "None at all"

Q5.6 For how long, prior to when the ACA took much of its effect in 2014, did you or your company research how this law would affect your company?

- ❍ Less than 3 months
- ❍ 3 to 6 months
- ❍ 7 to 12 months
- ❍ Over a year

Hide if Q5.4 = "None at all"

Q5.7 Which of the following resources did you or your company use while researching the ACA and how it would affect your company? Please select all that apply.

- ❑ Healthcare.gov
- ❑ Other government websites
- ❑ Non-governmental websites
- ❑ News providers (including newspapers, TV news programs, and news magazines)
- ❑ Other HR professionals
- ❑ Benefits provider/broker
- ❑ Other (please specify) _____
- ❑ I don't remember

Q5.8 Which resource did you or your company find most educational?

- ❑ Healthcare.gov
- ❑ Other government websites
- ❑ Non-governmental websites
- ❑ News providers (including newspapers, TV news programs, and news magazines)
- ❑ Other HR professionals
- ❑ Benefits provider/broker
- ❑ Other (please specify) _____

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Seen if Health Insurance Offerings changed in past 3 years in Q3.7

Q5.9 You previously stated that you have changed your health insurance offerings in the past 3 years, to what degree was this update motivated by the new laws surrounding the ACA?

- ❍ Wholly motivated
- ❍ Mostly motivated
- ❍ Partially motivated
- ❍ Not at all motivated

If Q5.9 = "Partially motivated" OR "Mostly motivated" OR "Not at all motivated"

Q5.10 Please tell us what else motivated your company to change your health insurance offerings, if not the new laws surrounding the ACA.

See if Q3.2 = "Employer-sponsored healthcare"

Q5.11 How have your company's health insurance premiums changed since the ACA took full effect?

- ❍ They have decreased a lot
- ❍ They have decreased slightly
- ❍ They have increased slightly
- ❍ They have increased a lot
- ❍ No change

See if Q5.11 ≠ "No change"

Q5.12 How much do you attribute that change to the ACA? Please indicate your response in terms of percent with 0% meaning you attribute none of your health insurance premium change to the ACA and 100% meaning you attribute all of your health insurance premium change to the ACA.

_____ % of change attributed to ACA **(Slider scale, 0% to 100%)**

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Q5.13 Have employment practices changed at your company as a result of the ACA?

- ❑ Yes, we are hiring fewer employees
- ❑ Yes, we have lowered salaries for new employees
- ❑ Yes, we are hiring more employees
- ❑ Yes, we have increased salaries for new employees
- ❑ Yes, we are reducing hours for new employees
- ❑ Yes, we are reducing hours for existing employees
- ❑ Yes, we are hiring more employees at part-time status rather than full-time status
- ❑ No
- ❑ I don't know

See if Q5.13 = "Yes, we are reducing hour for new employees"

Q5.14 You indicated that you are reducing hours for new employees; how often do you reduce new employees hours to under 30 hrs/week?

- ❍ Never
- ❍ Rarely
- ❍ Sometimes
- ❍ Often
- ❍ Always

See if Q5.13 = "Yes, we are reducing hours for existing employees"

Q5.15 You indicated that you are reducing hours for existing employees; how often do you reduce existing employees hours to under 30 hrs/week?

- ❍ Never
- ❍ Rarely
- ❍ Sometimes
- ❍ Often
- ❍ Always

Q5.16 Please briefly describe how your company's hiring practices have changed.

_____

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Q5.17 In which of the following ways have your employee healthcare benefits been changed as a result of the ACA? Please select all that apply.

- ❑ Spousal coverage has been dropped
- ❑ Plan offerings have been limited
- ❑ Lower cost plans with fewer benefits are now exclusively offered
- ❑ Employees are required to pay more towards their health insurance
- ❑ Wages have been raised to enable employees to purchase a plan from the state exchange
- ❑ Group coverage has been dropped
- ❑ Employee bonuses have been cut
- ❑ New employee wages have been cut
- ❑ Existing employee wages have been cut
- ❑ Other (please specify) _____
- ❑ Our healthcare benefits have not changed as a result of the ACA

If Q3.2 = "Employer-sponsored health insurance through a private insurer" or "Employer-sponsored health insurance through the SHOP exchange"

Q5.18 To the best of your knowledge, did your company ever consider eliminating its employer-sponsored health insurance to, instead, increase wages to enable individuals to purchase a plan on the exchange in their state?

- ❍ Yes, our company plans to eliminate its employer-provided insurance in the next 12 months
- ❍ Yes, this option was strongly considered
- ❍ Yes, there was some consideration of this option
- ❍ No, this option was not considered
- ❍ I don't know

If Q5.18 = "Yes, our company plans to eliminate its employer-provided insurance in the next 12 months" OR "Yes, this option was strongly considered" OR "Yes, there was some consideration of this option"

Q5.19 Is this something you discussed with your employees?

- ❍ Yes
- ❍ No

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Q5.20 To the best of your knowledge, have you noticed any change in the rate at which candidates accept job offers from your firm since the passing of the ACA?

- ❍ Candidates are accepting offers for our firm much less frequently
- ❍ Candidates are accepting offers for our firm somewhat less frequently
- ❍ Candidates are accepting offers for our firm somewhat more frequently
- ❍ Candidates are accepting offers for our firm much more frequently
- ❍ I have not noticed any change

See if Q5.20 ≠ "I have not noticed any change"

Q5.21 To what degree do you think the changes your company has made in response to the ACA have impacted this change in offer acceptance rate?

- ❍ No impact on the change in acceptance rate
- ❍ A very minor impact
- ❍ A slight impact
- ❍ A moderate impact
- ❍ A large impact

Seen if Average Business Size in 2016 was 100+

Q5.22 Has your company been subjected to a monetary penalty as a result of the Employer Mandate enforced through the ACA?

- ❍ Yes
- ❍ No
- ❍ I don't know

If Q5.22 = "Yes"

Q5.23 Please describe to the best of your ability the penalty you received and why your company was subjected to it as a result of the Employer Mandate enforced through the ACA.

If Q5.22 = "Yes"

Q5.24 Has your company made changes to avoid any future monetary penalties?

- ❍ Yes
- ❍ No
- ❍ I don't know

If Q5.24 = "No" OR "I don't know"

Q5.25 Please briefly describe what has prevented your company from making changes.

_____

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Seen if Average Business Size in 2016 was fewer than 50

Q5.26 These next questions will ask you about the Small Business Tax Credit, a component of the ACA which financially compensates small businesses that provide health insurance to their employees. To qualify for this tax credit, companies must employ less than 25 full-time (30 hrs or more/week) employees, the average annual wages of these employees must be under $50,000 a year, and offers health insurance to its employees. Through the Small Business Tax Credit, the government pays for at least 50% of the cost of premium, employer-provided health insurance uniformly across all employees.

Seen if Average Business Size in 2016 was fewer than 50

Q5.27 After reading the description above, does your company qualify for the Small Business Tax Credit provided through the ACA?

- ❍ Yes
- ❍ No
- ❍ I don't know

If Q5.27 = "Yes"

Q5.28 Has your company ever applied for the Small Business Tax Credit?

- ❍ Yes, this year
- ❍ Yes, in previous years but not this year
- ❍ No, never

If Q5.28 = "Yes, in previous years but not this year"

Q5.29 Why did your company choose not to apply for the Small Business Tax Credit this year?

If Q5.28 = "No, never"

Q5.30 Why has your company never chosen to apply for the Small Business Tax Credit, despite being eligible?

If Q5.28 = "Yes, this year"

Q5.31 Financially speaking, how helpful has the Small Business Tax Credit been for your company?

- ❍ Not at All Helpful
- ❍ Slightly Helpful
- ❍ Moderately Helpful
- ❍ Very Helpful
- ❍ Extremely Helpful

SHOP MARKETPLACE

This section is only asked among companies with fewer than 100 Employees

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Q6.1 How familiar are you with the Small Business Health Options Program (SHOP) marketplace available for small businesses with fewer than 100 employees?

- ❍ Not at All Familiar
- ❍ Slightly Familiar
- ❍ Moderately Familiar
- ❍ Very Familiar
- ❍ Extremely Familiar

Q6.2 The SHOP Marketplace (Small Business Health Options Program) provides qualified employers with lower costs on group plans and claim tax credits. As of 2016, employers with less than 50 full-time equivalent workers can use the SHOP. In 2016, the SHOP has opened for businesses with 100 or fewer full-time equivalent workers. Please keep in mind that employees who work on average 30 hours a week qualify as full-time workers.

Q6.3 After reading the description above, has your company considered entering into the SHOP marketplace?

- ❍ Yes, we have already entered the SHOP marketplace
- ❍ Yes, we plan on entering the SHOP marketplace in the next 12 months
- ❍ Yes, we have strongly considered this option but decided against it
- ❍ Yes, we have somewhat considered this option but decided against it
- ❍ No, we have never considered this option
- ❍ I don't know

EMPLOYEE HEALTH INSURANCE EDUCATION

Q7.1 In what ways does your company educate employees in any way about their health insurance options? Please select all that apply.

- ❑ We provide educational material about their healthcare options
- ❑ We conduct workshops educating employees on their healthcare options
- ❑ We provide information regarding health insurance options as part of our employee training process
- ❑ Other (Please specify) _____
- ❑ We do not provide any resources educating employees on their healthcare options

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Q7.2 How frequently do your fellow employees come to you with questions regarding the ACA?

- ❍ Never
- ❍ Less than once a month
- ❍ Once a month
- ❍ 2-3 times a month
- ❍ Once a week
- ❍ 2-3 times a week
- ❍ Daily

See if Q3.2 ≠ "Employer-sponsored health insurance through a private insurer" or "Employer-sponsored health insurance through the SHOP exchange"

Q7.3 Do your fellow employees come to you if they have issues signing up for health insurance coverage on the exchange?

- ❍ Yes
- ❍ No
- ❍ Not applicable

See if Q7.3 = "Yes"

Q7.4 Please provide a brief description of the issues outlined by these employees.

COMPETITOR OFFERINGS

Q8.1 How knowledgeable are you about your competitors' health insurance offerings?

- ❍ Not at All Knowledgeable
- ❍ Slightly Knowledgeable
- ❍ Moderately Knowledgeable
- ❍ Very Knowledgeable
- ❍ Extremely Knowledgeable

Q8.2 Thinking about only those competitors who employ fewer than 50 employees, how many of them offer their employees employer-sponsored health insurance? Please answer to the best of your ability.

- ❍ None that I know of
- ❍ Some of these competitors
- ❍ A moderate amount of these competitors
- ❍ Most of these competitors
- ❍ All of these competitors
- ❍ I don't know

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FINAL QUESTIONS

Q9.1 We just have a few more questions for you, and we thank you in advance for completing this survey in full.

Q9.2 How concerned is your organization about future additional requirements for ACA compliance?

- ❍ Not at All Concerned
- ❍ Slightly Concerned
- ❍ Moderately Concerned
- ❍ Very Concerned
- ❍ Extremely Concerned

Q9.3 How would your organization be affected if the ACA is repealed?

- ❍ It would be much worse off
- ❍ It would be somewhat worse off
- ❍ It would not be better or worse off
- ❍ It would be somewhat better off
- ❍ It would be much better off

Q9.4 Are you registered to vote as a Republic, Democrat, Independent, or something else?

- ❍ Republican
- ❍ Democrat
- ❍ Independent but more frequently vote Democrat
- ❍ Independent but more frequently vote Republican
- ❍ Other (please specify) _____
- ❍ I am not registered to vote
- ❍ I prefer not to say

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Q9.5 Do you consider yourself to be conservative, moderate, or liberal when thinking about politics?

- ❍ Conservative
- ❍ Lean conservative
- ❍ Moderate
- ❍ Lean liberal
- ❍ Liberal
- ❍ Undecided
- ❍ Other (please specify) _____
- ❍ I prefer not to say

Q9.6 Thank you for your time. Your responses to this survey are greatly appreciated.

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Appendix II. Assigning Each Respondent a Probability of 30-49 FTEs

I assigned each business a probability of having 30-49 FTEs based on their brackets for full- and part-time employment. A sample respondent's probability assignment is done in three steps: (i) assigning a probability of each integer number of full-time employees 10, 11, … 199 from the reported bracket and assuming that size is distributed Pareto within brackets, (ii) assigning a probability of each integer number of part-time employees 0, 1, … 249 from the reported bracket and assuming that size is distributed Pareto within brackets, (iii) forming a joint distribution by assuming within-bracket independence between full- and part-time employment. Assuming each part-time employee is 2/3 FTE, the joint distribution assigns each sample respondent a probability of FTEs in the interval [30,50).

Figure 5a shows the MM full-time data and the Pareto model fit to it (shape parameter 0.067). Sample respondents reporting 2-9 full-time employees are assigned a probability of zero because all of them report fewer than 40 part-time employees. Figure 5b shows the MM part-time data and the Pareto model fit to it (shape parameter 0.136). Note that the Pareto models are used only to distribute respondents among the integers within its reported size category.

Appendix III. The Duggan-Goda-Jackson approach to measuring labor market effects of the ACA

A recent empirical paper by Duggan, Goda and Jackson (2017, hereafter, DGJ) concludes that "labor market outcomes in the aggregate were not significantly affected" by the ACA. It also claims (p. 11) to capture the ACA's effects on labor demand and that "lower income individuals worked more" because of the ACA (p. 5). However, their regional-comparison strategy fails to construct comparisons related to the size of the employer penalty. By taxing employment, the employer penalty probably reduces employment, especially in low-income areas where the penalty is the equivalent of 50-60 work days per year. By design, the DGJ study does not measure employment effects of the employer mandate, regardless of how large they might be.

Assuming that the ACA does more to affect work in Medicaid-expansion states than in states that did not expand, DGJ emphasize differences between those two types of states. But I am not aware of any evidence that the employer mandate is much different in Medicaid-expansion states. Both the MEPS-IC data and the Mercatus-Mulligan survey show a nationwide change in the size distribution of businesses, with essentially no difference between the two types of states. Figure 6 is the same as Figure 1, except that the two types of states are also shown separately: the two series coincide both before and after the mandate's implementation.

The Mercatus-Mulligan sample can also be divided into the two types based on the state of the respondent's internet-service provider (ISP).[43] The two subsamples have essentially the same propensity of respondents to have FTEs between 30 and 49.[44]

It is also difficult to believe that penalizing an employer the equivalent of $3,449 per full-time employee (recall Table 1) would do anything but reduce employment of low-skill workers. Figure 7, which reproduces Figure 6 except with states distinguished by their average poverty rate 2009-13 (measured in the American Community Survey; 24

[43] 508 (234) respondents have ISP in Medicaid expansion (nonexpansion) states, respectively. Three respondents must be omitted because their ISPs were not in the 50 states or DC. Medicaid expansion status is taken as of early 2016 and applies to 30 states and DC.
[44] The subsample means differ by only eight percent. The t-statistic corresponding to the hypothesis that the two subsamples have the same average propensity is 0.40.

states plus DC are in the high-poverty group), is consistent with this prior because most of the apparent business-size distortion occurs in the high poverty states.

More generally, it is the size of tax wedges – both from penalties and from subsidies – that are the basis of economic hypotheses that the ACA would distort the labor market. It is therefore remarkable that the DGJ paper makes no attempt to measure the size of the tax wedges created by the ACA, or to utilize tax-wedge measures published elsewhere (Mulligan 2015b, 2015a). Without such measures, it is difficult to confirm that DGJ are making comparisons between geographic areas that are sufficiently different in terms of their ACA wedges to detect the behavioral effects of those wedges. We therefore have no confirmation that the DGJ study has a decent chance of detecting the distortions that are of such concern.

An important instance would be to measure the tax wedges for a hypothetical geographic area (hereafter, HFIA) that, prior to the ACA, had nobody uninsured below 400% of the federal poverty line. By construction, DGJ can find only the effects of the ACA that exceed those of the HFIA. Yet Mulligan (2015a) shows particularly large tax wedges for near-elderly *insured* people, who presumably are among the residents of a HFIA. Moreover, the employer mandate is a tax on full-time employment, even in places where the entire population had been insured prior to the ACA.

Even if the labor market effects of the ACA could, as DGJ assert, be measured by comparing geographic areas with the HFIA, they show an aggregate negative effect of the ACA on labor force participation (sic). See the first two rows of column (1) of their Table 4, where the "post" coefficient in the Out-of-the-Labor-Force (OLF) model is negative according to the prevalence of uninsured poor people and positive according to the prevalence of uninsured middle-class (roughly, the poverty line up to 400% of poverty) people, with the two coefficients having essentially the same magnitude. Because the middle class outnumbers the poor, the negative effect associated with the middle class dominates (from an aggregate perspective) the positive effect associated with the poor. Specifically, if we use that regression to project the ACA's impact on the

number of people OLF in the HFIA in 2016, it would be 349,190 less than the U.S. aggregate ACA impact.[45]

As DGJ interpret their comparisons with the HFIA, 349,190 is therefore the ACA's "effect" on the nationwide number of people OLF. As I explained above, the ACA effect from their paper is more appropriately understood as 349,190 *plus* the ACA's effect in the HFIA that, judging from the tax wedges, is itself positive. Perhaps the 349,190 is statistically indistinguishable from zero, but it is not economically insignificant especially when combined with the ACA's effect in the HFIA. The statistical results in the DGJ paper in no way contradict this paper's finding that the ACA rather vividly distorts the labor market by, among other things, inducing between 28,000 and 50,000 businesses to cut their payrolls sharply enough to avoid being designated as large businesses.

[45] To quantify this, it is necessary to have the population-weighted sample means of DGJ's M* and E*, which are not reported in the paper. I found 349,190 as [.073*(–.0847)+.086*(.0962)] times the working age population in 2016 (St. Louis Federal Reserve FRED series LFWA64TTUSA647N minus BLS series LNU00024887Q). The 0.073 and 0.086 are the unweighted averages reported on page 11 of their paper.

Table 1. The salary equivalent of the 2017 employer penalty

	Scenario:		
Expense items	Penalty imposed	Salary raised	
2017 ACA penalty	2,265	0	
Salaries	0	3,449	
Payroll tax	0	264	7.65% rate
Business income taxes	0	-1,448	39% rate
Net result for employer expenses including taxes:	$2,265	$2,265	

Table 2. Estimates of Threshold Crossings from Total-employment Data

Before-after estimates

	MM/Census	MEPS-IC
49er businesses with fewer than 50 employees		
Aggregate post-mandate employment	636,842	401,242
Number at 40 employees per business	15,921	10,031
Number at 45 employees per business	14,152	8,916
49er businesses with 50 or more employees		
Aggregate employees eliminated - Assumption A	NA	399,158
Number at 10 positions eliminated per business - Assumption A		39,916
Aggregate employees eliminated - Assumption B	NA	192,657
Number at 10 positions eliminated per business - Assumption B		19,266
Total number of 49er businesses		
Assumption B, with 45 average employment below 50	NA	28,182
Assumption A, with 40 average employment below 50	NA	49,947

Notes

MM/Census uses brackets 40-49 and 50-74. MEPS-IC uses 25-49 and 50-99.

MM/Census uses the years 2012 and 2016. MEPS-IC uses 2013-14 and 2015-16.

Assumption A: Employment per business would have grown the same 50-99 as for the entire labor market (2.3%)

Assumption B: Employment per business among 50-99 would have been the same as in 2013-14.

Table 3. The propensity to offer ESI in various subsamples

Timeframe and subsample of small businesses	Percentage of businesses offering	Percentage of 2016 employees at businesses offering
In March 2017, among the entire sample	64	74
In March 2017, among those not offering in 2013	45	71
In 2013, among those not offering in March 2017	44	67
In 2013, among the entire sample	63	70

ESI change	Percentage of small businesses	Percentage of 2016 employees at small businesses
Dropped ESI in the past 6 months	5	6
Added ESI in the past 6 months	< 1	< 1

Note: a small business is defined as any business having 2-199 full-time employees.

Table 4. The propensity to offer ESI by employer size

From the March 2017 Mercatus-Mulligan survey. Dependent variable is an indicator for offering ESI.

		ESI at the time of the survey					ESI in 2013		Drop ESI in 2017
Regressor	OLS	TSLS1	TSLS1	TSLS1	TSLS2	TSLS3	TSLS1	TSLS3	TSLS1
				Size Regressors					
Probability of having 30-49 FTEs in 2016		-0.267	-0.256	-0.288	-0.176	-0.079	0.075	0.011	0.168
		(0.099)	(0.100)	(0.098)	(0.083)	(0.095)	(0.100)	(0.097)	(0.056)
Have 30-34 full-time employees at the time of the survey	-0.14 (0.10)								
Have 34-39 full-time employees at the time of the survey	-0.20 (0.12)								
Have 40-49 full-time employees at the time of the survey	-0.12 (0.06)								
				Other Regressors					
Number of other fringe benefits offered	0.05	0.05	*0.05*	*0.03*	0.05	0.05	0.06	0.06	0.00
(Italics means that dental is excluded)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)
A dental benefit is offered				0.20 (0.04)					
Median annual salary of full-time nonsupervisory employees ($10,000s)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.01 (0.00)
19 industry indicators	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.089								
Observations	745	745	745	745	745	745	745	745	745

Note: The TSLS1 specification treats the probability variable as an endogenous variable, instrumenting it with the three time-of-survey size indicators (as well as the other regressors shown). TSLS2 is the same, except also using 2016 size indicators. TSLS3 excludes the time-of-survey size indicators. An employer is coded as having ESI in 2013 if and only if it (a) did not have ESI at the interview (March 2017), but had discontinued it recently or (b) it had ESI at the interview and had it for at least 3 years. OLS standard errors are in parentheses.

Table 5. The nationwide prevalence of 49er businesses

	Statistic	Source	Value
(1)	"Excess ESI" conditional on 30-49 FTEs in 2016	Table 4	-0.267
(2)	Probability of having 30-49 FTEs in 2016, among businesses having total employment between 5 and 199, employment weighted	Mercatus survey, simple average	0.141
(3)	2014 national employment by businesses 5-199	Census Bureau	42,679,871
(4)	2014 national payroll employment	BLS	138,958,000
(5)	2016 national payroll employment	BLS	144,306,000
(6)	2016 national employment at businesses with 30-49 FTEs	(2)*(3)*(5)/(4)	6,227,595
(7)	Employment at the businesses with "excess ESI"	(1)*(6)	-1,664,523
(8)	Average employment at businesses with 30-49 FTEs in 2016	Mercatus survey, average weighted by probability/(total employment)	43.4
(9)	Number of 49er businesses in 2016	-(7)/(8)	38,327

Note: Row (9) is varies proportionally with row (1).

Table 6. Employer Reports of the ACA's Impact, by employer size

From the March 2017 Mercatus-Mulligan survey.

Dependent variable counts responses for reducing hours and reduced hiring "as a result of the ACA."

		Counting variable			Indicator variable		
Regressor	OLS	TSLS1	TSLS2	TSLS3	TSLS1	TSLS2	TSLS3
		Size Regressors					
Probability of having 30-49 FTEs in 2016		0.421	0.303	0.243	0.264	0.187	0.156
		(0.169)	(0.142)	(0.163)	(0.109)	(0.092)	(0.105)
Have 30-34 full-time employees at the time of the survey	0.55 (0.16)						
Have 34-39 full-time employees at the time of the survey	-0.19 (0.21)						
Have 40-49 full-time employees at the time of the survey	0.22 (0.11)						
		Other Regressors					
Number of other fringe benefits offered	0.03	0.03	0.03	0.03	0.01	0.01	0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
A dental benefit is offered							
Median annual salary of full-time nonsupervisory employees ($10,000s)	0.04 (0.01)	0.04 (0.01)	0.04 (0.01)	0.04 (0.01)	0.03 (0.01)	0.03 (0.01)	0.03 (0.01)
19 industry indicators	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.046						
Observations	745	745	745	745	745	745	745

Note: The TSLS1 specification treats the probability variable as an endogenous variable, instrumenting it with the three time-of-survey size indicators (as well as the other regressors shown). TSLS2 is the same, except also using 2016 size indicators. TSLS3 excludes the time-of-survey size indicators. The indicator variable counts each respondent at most once, even if they replied both reducing hours and hiring. OLS standard errors are in parentheses.

Table 7. Positions absent from the 38,327 49er businesses

Average number of FTEs eliminated/not created in order to keep FTEs below 50, conditional on positive	National number of positions absent	
	FTE	FT + PT
3	114,981	123,029
4	153,307	164,039
5	191,634	205,049
6	229,961	246,058
7	268,288	287,068
8	306,615	328,078
9	344,942	369,087
10	383,268	410,097
11	421,595	451,107
12	459,922	492,117

Note: 1.07 positions (full- and part-time combined) are assumed for each FTE.

Table 8. Termination points in the Hanover Survey

Question number	Answer resulting in survey termination	Number terminated here
1	Not employed full time	140
3	Title is not at manager level or higher	62
4	Company only started in 2017	14
5	Number of full-time employees currently is <2 or 200+	140
6	Average number of full-time employees in 2016 was <2 or 200+	18
8	"No" or "limited" role in regards to deciding employee hiring and benefits	197
	Total survey terminations	571

Table 9. Summary Statistics

for the March 2017 Mercatus-Mulligan survey.

Variable	Observations	Mean	Median	Std. dev.	Min.	Max.
Number of fringe benefits offered (not counting ESI)	745	3.07	3	2.23	0	9
Offer dental plan	745	0.55	1	0.50	0	1
Median annual salary of a typical non-management full-time employee	745	52,195	48,000	23,148	0	100,000

See also Tables 3 and 5.

Figure 1. Employees in 25-49 firms, as a share of employees in 25-99 firms
(private sector MEPS-IC; FT and PT counted equally)

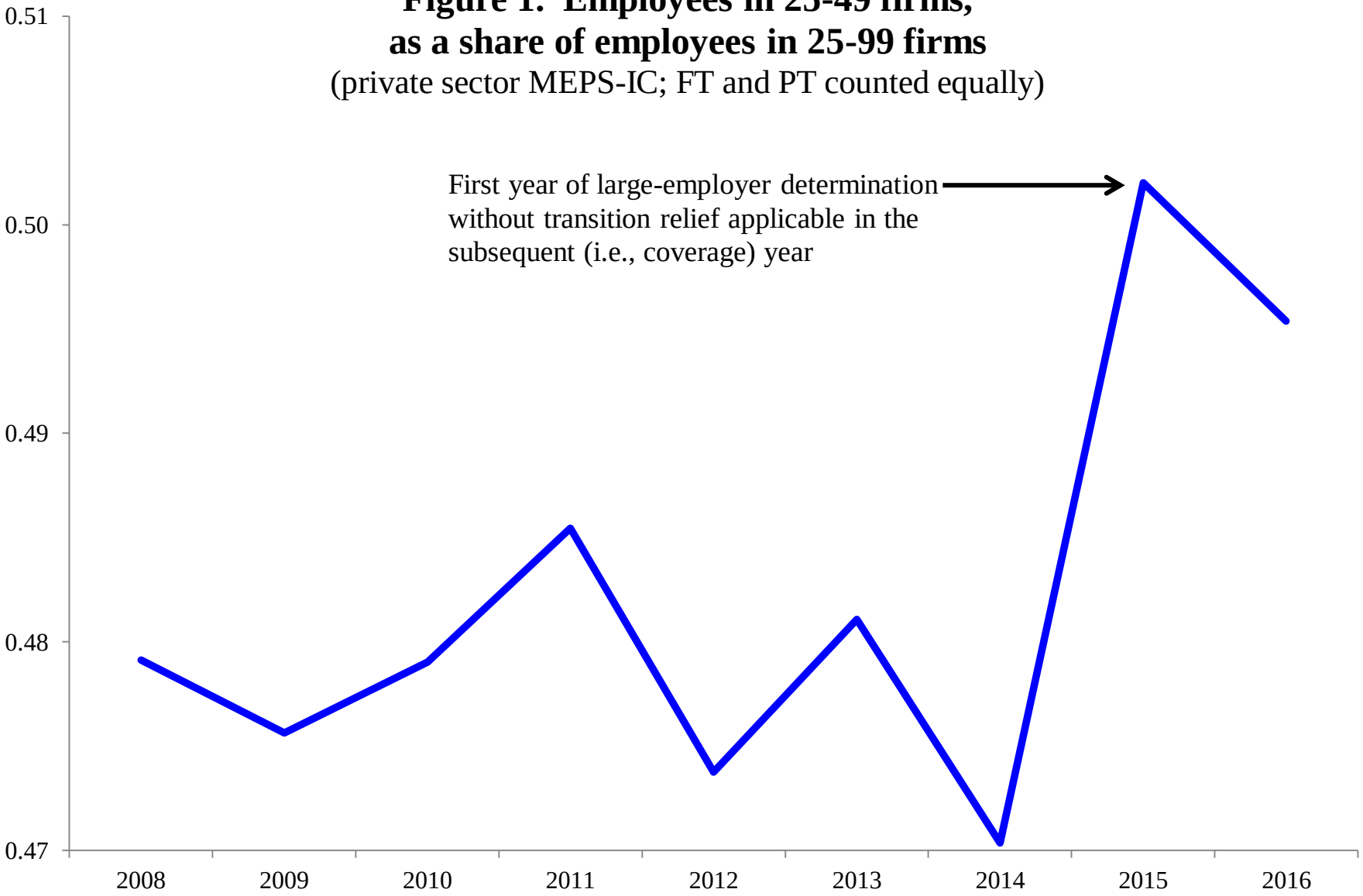


Figure 2. The Size Distribution of Employers 5-199

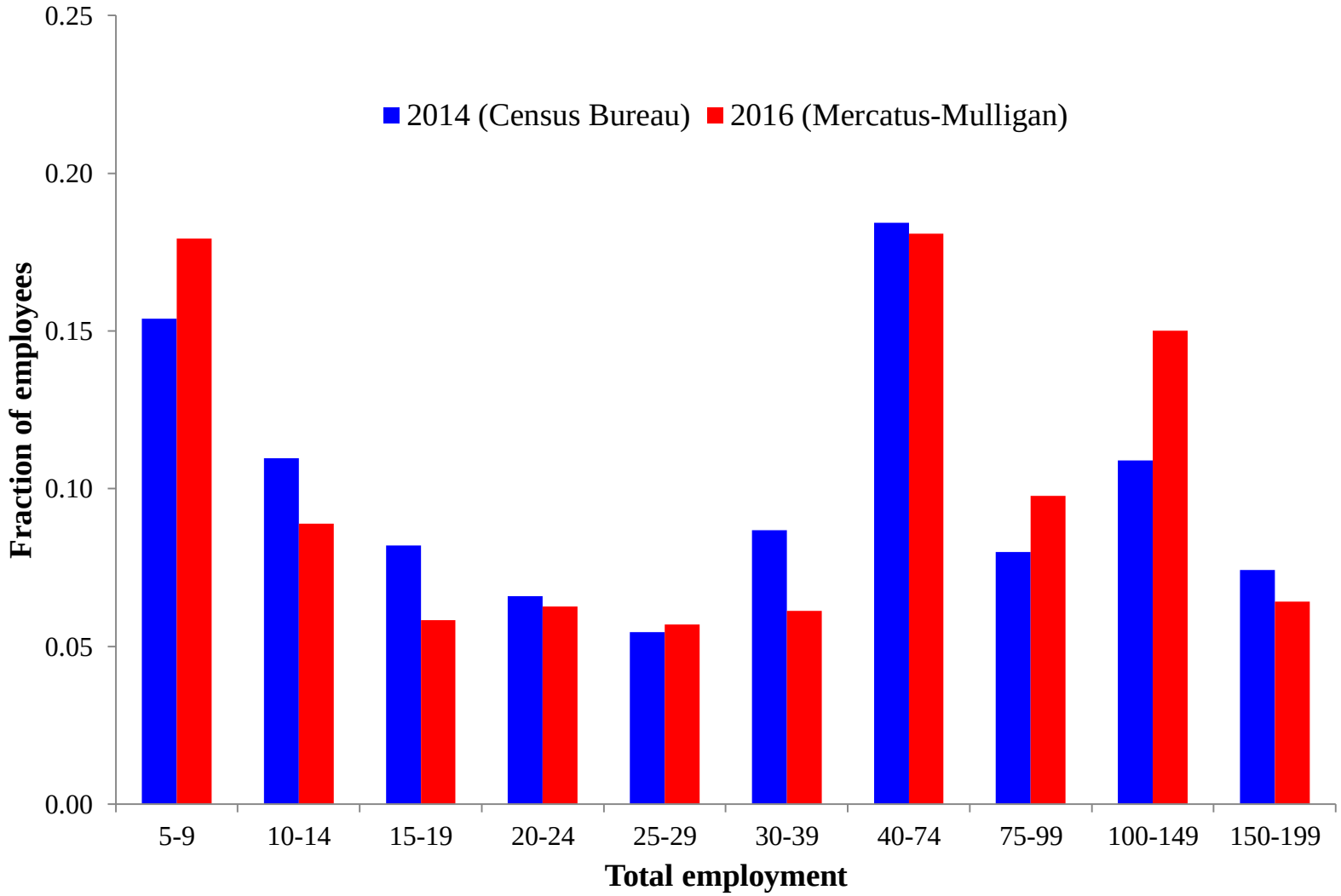


Figure 3. Non-ESI firms stay below 50

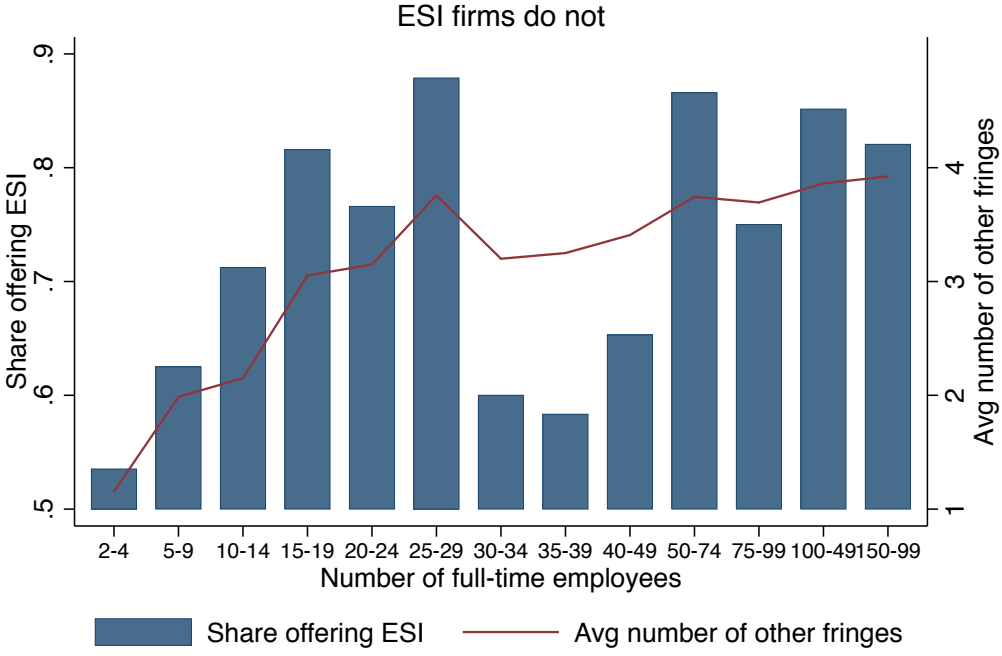
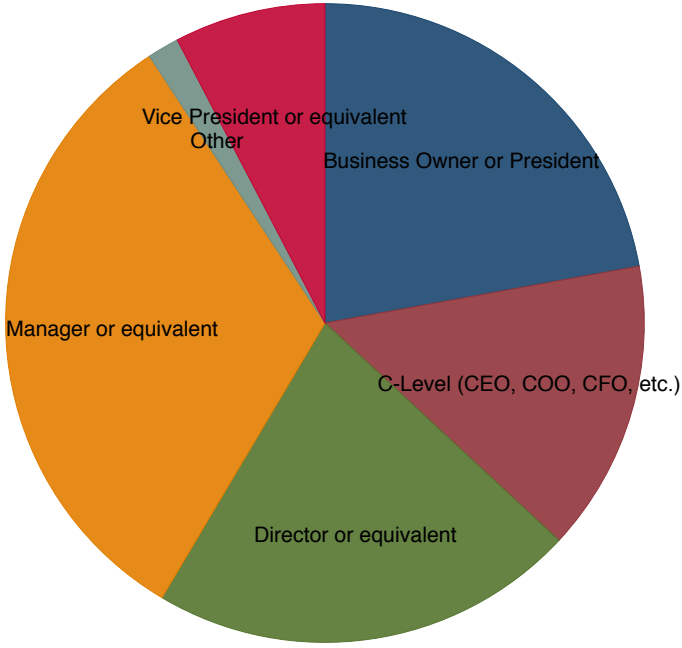


Figure 4a. Which of the following comes closest to your title?



Administrative support was also an option. It results in survey termination.

Figure 4b. The industry distribution of small-business employment 5-199

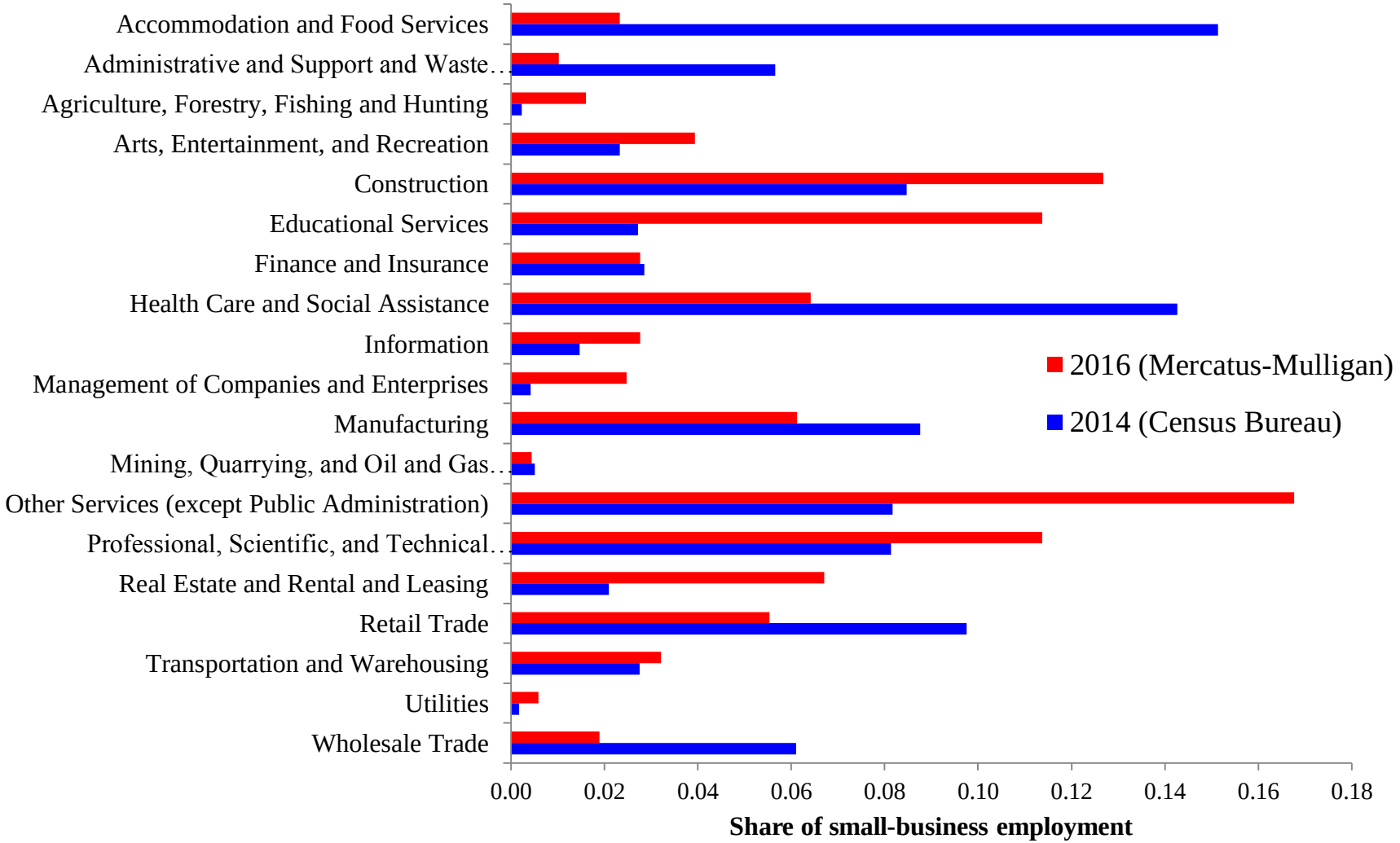


Figure 5a. Full time last year

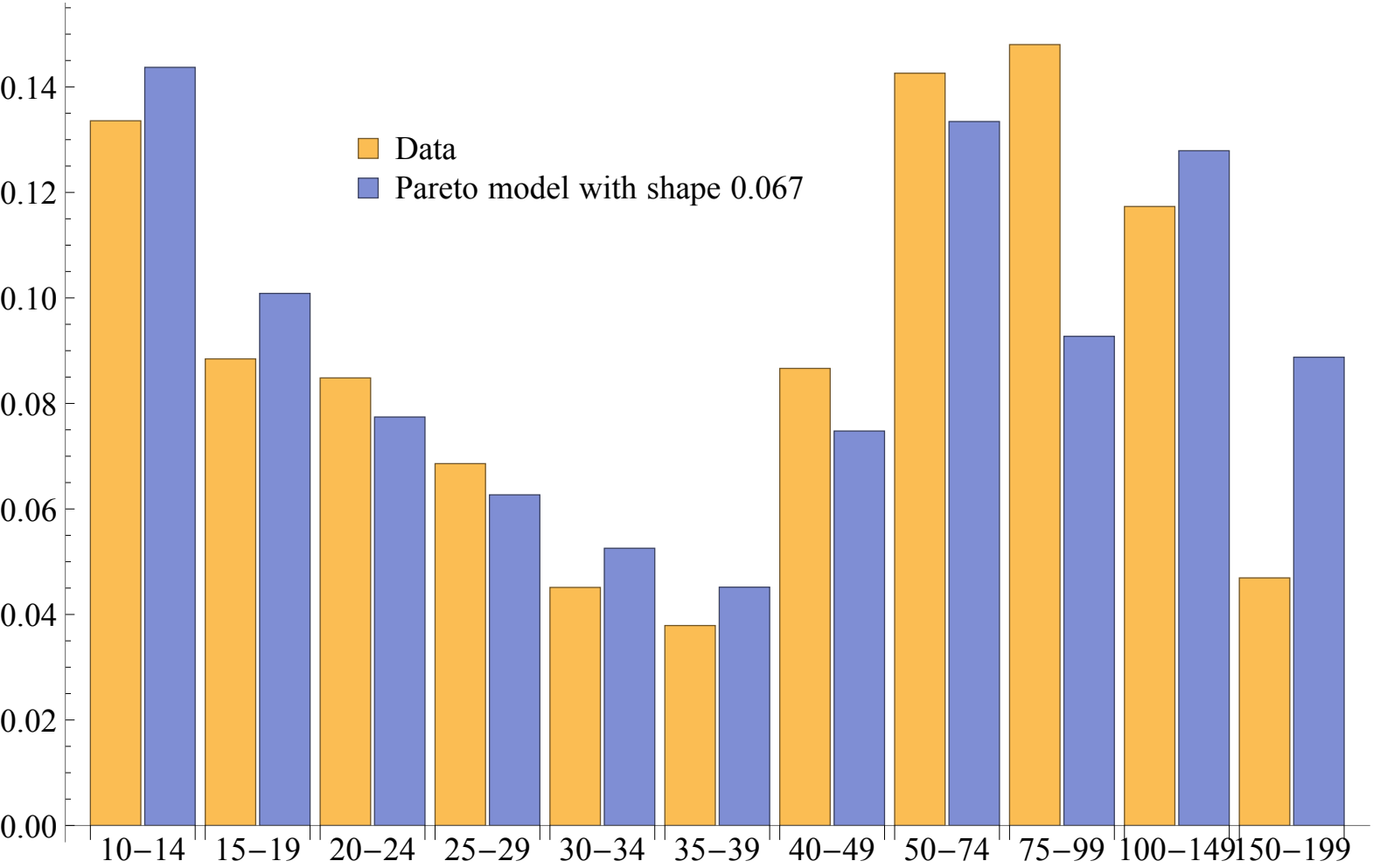


Figure 5b. Part time last year

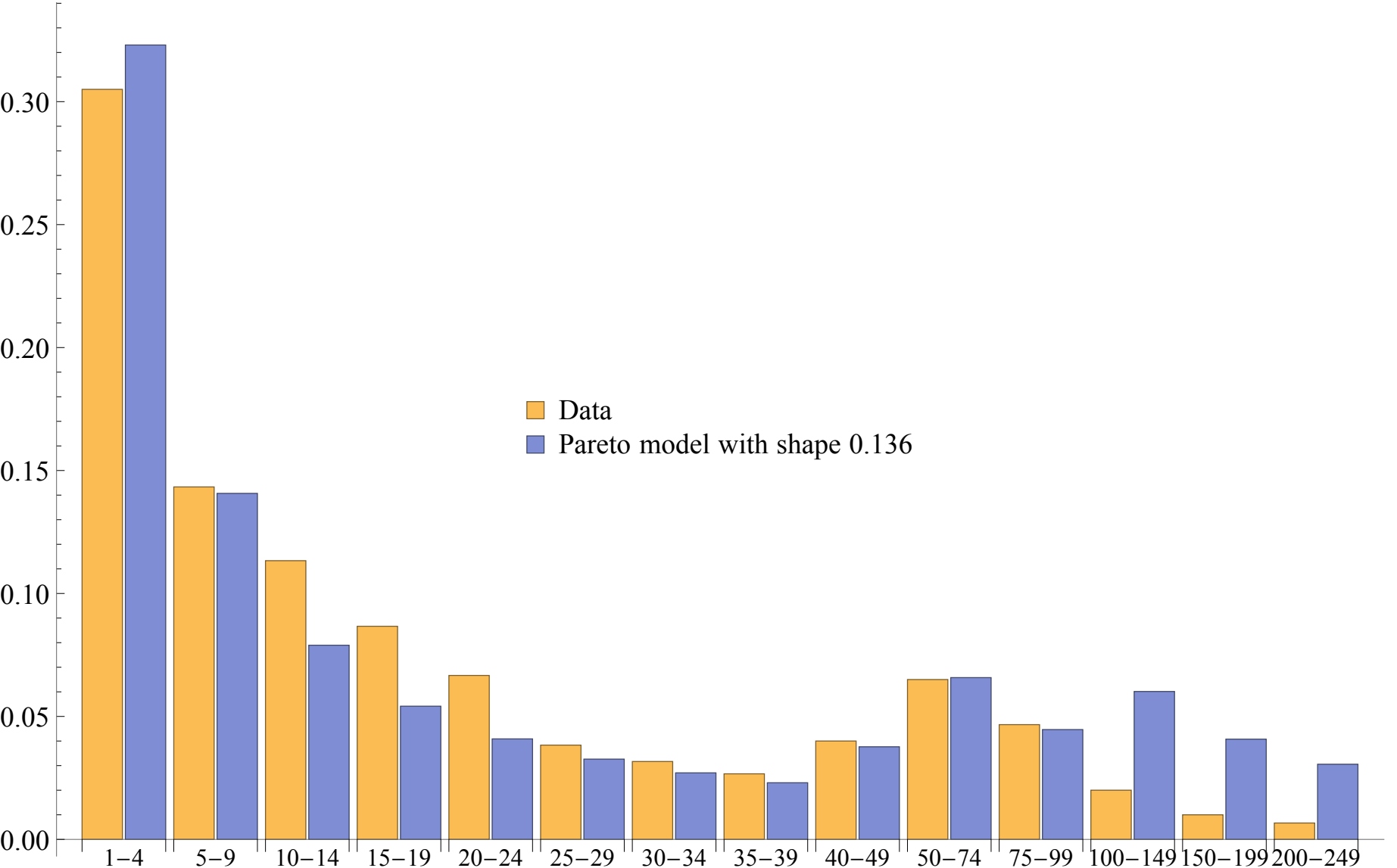


Figure 6. Employees in 25-49 firms, as a share of those in 25-99, separately by Medicaid expansion status

(private sector MEPS-IC; FT and PT counted equally)

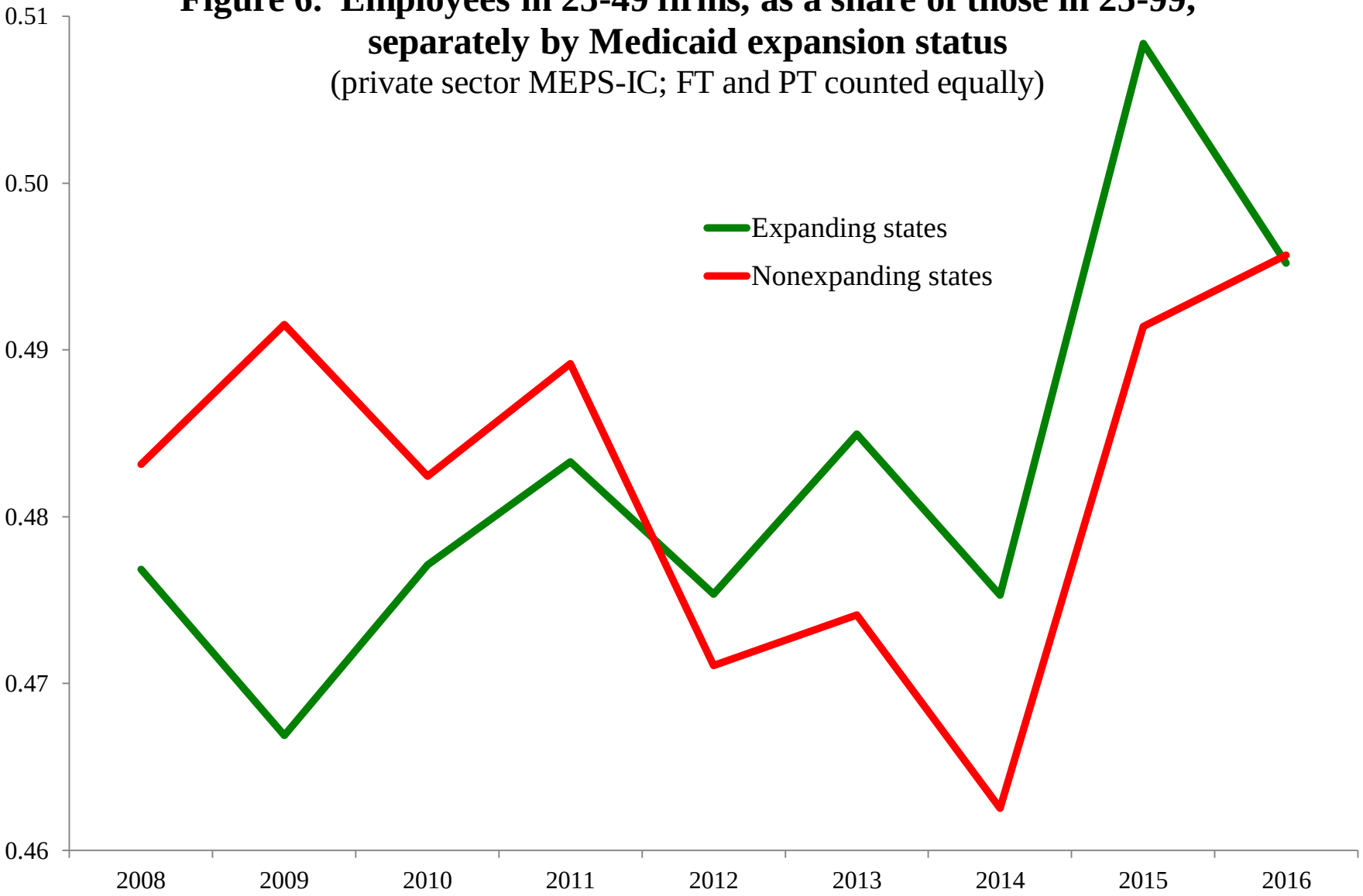
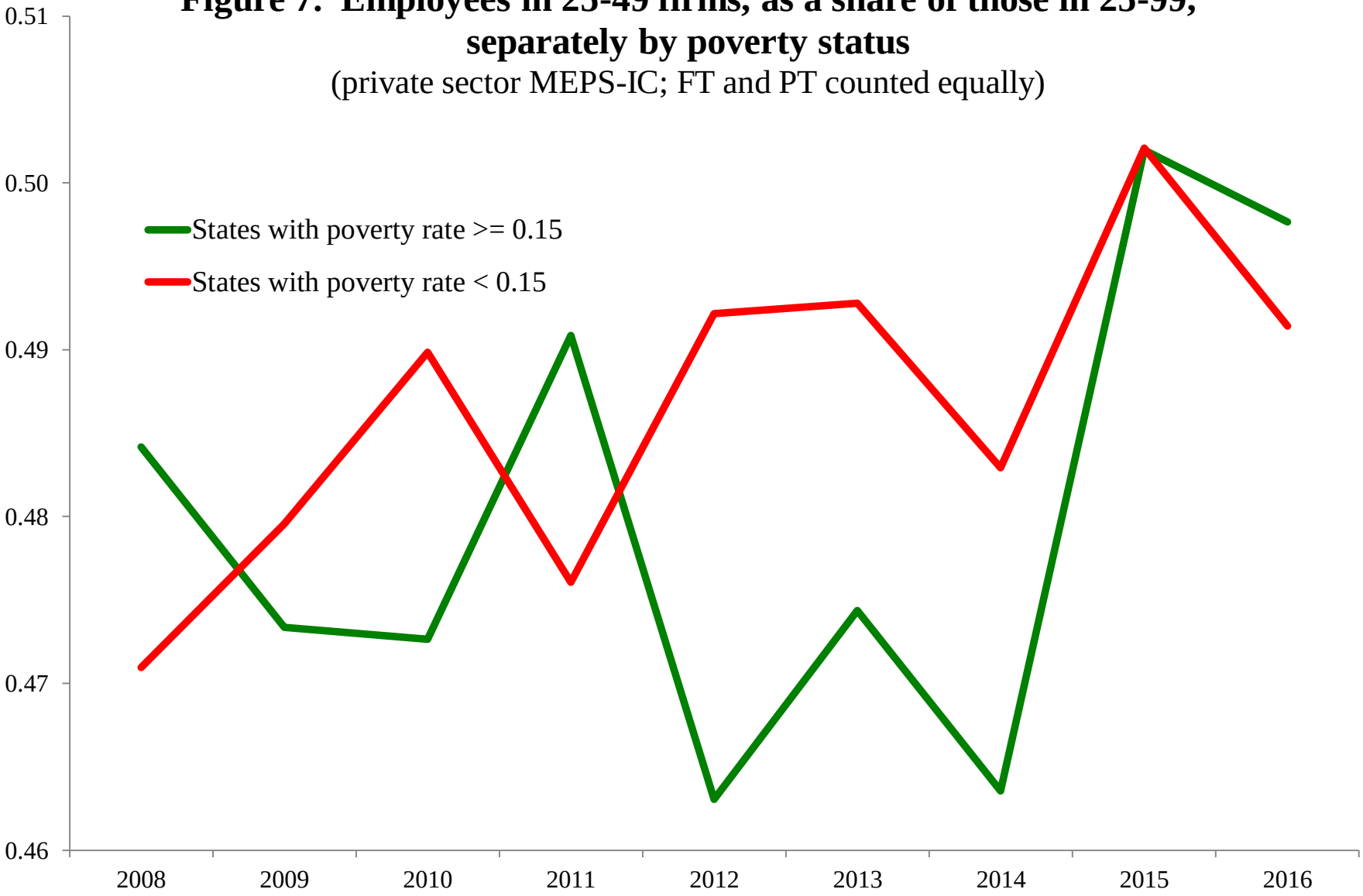


Figure 7. Employees in 25-49 firms, as a share of those in 25-99, separately by poverty status

(private sector MEPS-IC; FT and PT counted equally)



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