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LABOR DYNAMICS AT NEW FIRMS DURING THE GREAT RECESSION

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Abstract

This study uses data from the Kauffman Firm Survey to analyze the impact of the Great Recession on wages and employmentatrecentlycreatedbusinesses. Related studies on the recessionary effects at the firm level have tended to focus on broad cross sections of firms. In contrast, newly established businesses tend to be small and employ only a handful of employees and therefore face greater constraints in how they respond to economic downturns. The dataset used in this study is a panel of nearly 5,000 firms that started operations in 2004 with data collected annually through 2011. Using traditional panel regression techniques as well as quantile regression analysis, this study finds evidence that the Great Recession was associated with a decline in full-time employment at new firms. In contrast, little evidence is found that firms responded to the Great Recession by adjusting the number of part-time employees or per employee wages. These findings suggest traditional labor market frictions, such as wage rigidities, play an especially important role for young and small firms.

Keywords: New Firms, Entrepreneurs, Recession, Employment, Wages

1. Introduction

The Great Recession of 2007-09 is well documented through the lens of macroeconomic statistics, but its impact on employment and wages at the firm level is less understood. This is important since a better understanding of the firm-level dynamics associated with the business cycle may improve the implementation of government policies aimed at improving labor market conditions. It is also important from the perspective of business owners. If faced with pressure to reduce labor costs, firm owners may be faced with a choice of cutting wages, reducingemployees to part-time status, or letting employees go entirely.

This study utilizes the Kauffman Firm Survey (KFS) to examine the impact of the Great Recession on firm level wages and employment. The KFS is a panel dataset of nearly 5,000 firms that were established in the year 2004 and were surveyed annually through 2011. The time period of the survey allows analysis of the wage and employment dynamics during and surrounding the Great Recession, while controlling for characteristics specific to the firm and owner. More generally, the analysis provides insight as to how young firms are affected by a recession.

This study finds that during the Great Recession—especially the years 2008 and 2009—employment at certain young firms was hit particularly hard. Employment at the average young firm declined by about a quarter person each year during the 2008-09 period. To put this into perspective, the typical young firm in the KFS dataset employed 2.4 workers from 2004-2011. This study does not find conclusive evidence that wages on a per employee basis declined during the Great Recession. There is some evidence that wages actually increased, which suggests that firms retained their most productive employees during the Great Recession, while letting others go. Lastly, this study finds no compelling evidence that the Great Recession was associated with a change in part-time employment. Instead, the decline in employment appears to occur by in large because of a reduction in full time employees.

The paper proceeds as follows. The next section reviews previous studies that are related to this one; section 3 describes the data used in this study; section 4 discusses the model and empirical results; and section 5 concludes.

2. Previous Studies

The Great Recession of 2007-09 was notable for the severe and enduring impact on the U.S. labor markets. Indeed, the Great Recession was the deepest economic downturn in the postwar era, with median family income declining by nearly 8% and the number of jobs declining by about 6% (Elsby, Hobijn, and Sahin, 2010;Kalleberg and Von Wachter, 2017). The nation's unemployment rate peaked at 10% in October 2009, after which nearly six years would pass until unemployment returned to its pre-recession rate of 5%. Economists often point to labor market frictions, such as wage rigidities, to help explain the severity of the Great Recession(e.g., Herkenhoff and Ohanian, 2011; Card and Mas, 2016).Very few of these studies, however, have focused their analysis on employment at newly created businesses.

The focus of this study is how the Great Recession impacted wages and employment for recently established firms. Young firms are a particularly interesting cohort to study because they tend to be small and may have different constraints than older, more established firms. Given this, several recent studies have found that firm size is an important determinant in terms of how the Great Recession impacted labor outcomes at the firm-level. For example,Chodorow-Reich (2014)constructs a database of 2,000 nonfinancial firms and examines the link between credit market frictions and firm-level employmentduring the Great Recession. The study finds that relatively small firms have a particularly sensitive relationship between their employment level and credit market frictions.

Similarly, Siemer (2014) uses confidential firm-level data from the Bureau of Labor Statistics to show that external financial constraints reduced employment growth in small firms relative to large firms during 2007-09 by 4.8 to 10.5 percentage points. The study finds evidence that this result is largely because of young firms. It is important to note that Siemer (2014) defines small firms as having 50 or fewer employees. As will be discussed later in this paper, most firms in the KFS dataset have only a handful of employees.

Dugyan-Bump et al. (2015) shows that financing constraints of small firms played an important role in the unemployment dynamics during the Great Recession. Workers at small firms were more likely be to unemployed during this recession than workers at larger firms, although this finding is conditional on the small firm existing in an industry with high financing needs. This study finds similar results for the 1990-91 recession, but not the 2001 recession.

This paper closely follows Zarutskie and Yang (2016). Theirs is the only study that I am aware of to have systematically examined how young firms were impacted by the Great Recession. Zarutskie and Yang utilize the KFS dataset and run a battery of panel regressions using assets, employment, wages, and revenue each as dependent variables. Year dummies are specified in the regressions which allow the authors to estimate the impact of the Great Recession. This is the same general methodological approach used in this paper. Zarutskie and Yang find that, on average, young firms experienced lower employment, revenue, and assets during the Great Recession. On average, a firm's employment decreased by about 10% during 2008-09, or about 0.5 fewer employees. When fixed effects are added to their model, they find evidence that wages, measured on a per employee basis, increased during the recession. Zarutskie and Yang interpret the increase in wage per employee as evidence that firms retained their most skilled employees during this time, as well as that firms that paid higher wages were, on average, more likely to shut down during the recession.

3. Data Description

The KFS was designed to elicit a representative sample of new businesses in the U.S. The sampling frame consisted of firms listed in the 2004 Dun and Bradstreet database. A firm needed to satisfy at least one of the following five criteria to be included in the sample: (i) payment of state unemployment taxes; (ii) payment of Federal Insurance Contributions Act (FICA) taxes; (iii) presence of a legal status for the business; (iv) the firm had an Employer Identification Number (EIN); or (v) Schedule C was used to report business income on a person tax return. Based on these criteria, 32,469 firms were mailed a letter inviting them to participate in the survey.[I] A total of 4,928 firms chose to participate in the KFS, and it is the data on these firms and their primary owners upon which the analysis in this study is conducted.[II]

[I] See Farhat and Robb (2014) for a detailed description of the KFS survey design and methodology.

[II] The data used in this study and detailed definitions of variables can be found at the Kauffman Foundation's KFS website: https://www.kauffman.org/microsites/kfs/data-files.

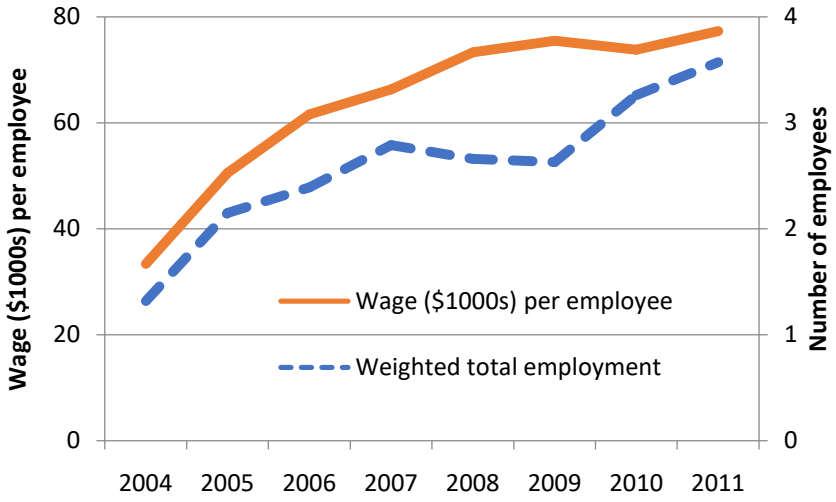
As summarized in Table 1, each of the 4,928 firms was given follow-up interviews each year through 2011, unless the firm was merged or sold, out of business, temporarily stopped, or the owner(s) refused to participate. The number of firms who went out of business each year fluctuated between 209 and 344, about 4.2% and 7.0% of the initial cohort of 4,928 firms. By 2011, the final year of the survey, 2,007 firms (40.7% of the initial cohort) were stillin operation. Across all of the years of the KFS survey, 289 firms (5.9% of the initial cohort) were merged or sold; 1901 firms (38.6% of the initial cohort) went out of business; and there were 462 instances (9.4% of the initial cohort) of firms temporarily stopping operations.

Table 2 and Table 3 provide descriptive statistics on owner demographics and the legal structures, which may be important to control for when analyzing the impact of the Great Recession on firm-level employment and wages. Of the primary owners in 2004, about 75% are male; 82% are white; 48% do not have a bachelor's degree; 33% are between 35 and 44 years of age. About 33% of the new firms are sole proprietorships (with limited liability companies accounting for an additional 32% of the firms in 2004).Lastly, about 12% of the new firms in 2004 owned intellectual rights, meaning these firms owned at least one patent, trademark, or copyright.

Table 2 describes the firm-level economic variables used in this study. In their first year of operation, firms generated on average $43,700 in profit, with $71,800 and $146,400 in debt and assets. These firms also employed an average of 2.6 full-time and 1.2 part-time employees, paying $33,400 in total wage expenses per employee. It is worth noting that these figures are skewed to the right. A primary objective of this study is to analyze if and how employment and wages at the firm level were impacted by the Great Recession. This study defines total employment as the sum of a firm's full-time employees and one-half of the part-time employees. Thus, for example, if a firm replaces a full-time employee with a part-time employee, the firm's weighted total employment will decrease.[III]

Figure 1 below plots the cross-sectional means of the nominal wages per employee with weighted total employment over the years2004-11.By the firms' fourth year of operation, in 2007, average employment and per employee wage expenses have nearly doubled from their initial 2004 values. However, a divergence in the behavior of these variables appears to occur in 2008 and 2009: mean employment decreases by a tenth of a worker each year, while the mean wage per employee increases by nearly $7,000 and another $2,200. This divergence suggests that new firms responded to the Great Recession by cutting employment as opposed to wages. What remains to be seen, however, is if this divergence occurs statistically after controlling for firm-specific factors.

Figure 1 - Mean Employment & Wages at Young Firms



[III] In contrast, Zarutskie and Yang (2016) use the unweighted sum of full-time and part-time workers, in which case a 1:1 replacement of a full-time employee with a part-time employee would result in no change in the firm's total employment.

4. EmpiricalAnalysis

4.1 The Model

Regression analysis is used to estimate the impact of the Great Recession on firm-level employment and wage expenses, conditional on firm characteristics. The regression model follows closely with Zarutskie and Yang (2016). Specifically, a firm's log weighted total employment is modeled as a function of the previous year's log employment (*emp*), log assets, log revenue (*rev*), and contemporaneous firm and owner characteristics. More formally, the model is:

$$\ln(emp)_{i,t} = \mu_i + \delta_t + \alpha \ln(emp)_{i,t-1} + \beta \ln(assets)_{i,t-1} + \gamma \ln(rev)_{i,t-1} + \sum_{j=1}^{n} \theta_j x_{ijt} + \varepsilon_{i,t-1} \quad (1)$$

where time invariant influences specific to firm i are captured by the fixed effects term μ; employment, assets, and revenue each are specified in natural logs and lagged one year; x_j is the j^{th} element of the vector of firm and owner characteristics; and ε is the disturbance term with a mean of zero and a constant variance. The specification of equation (1) is also used to model a firm's log wage expense per employee. Of particular interest in this study are the year-specific shocks common to all firms, which is captured by the dummy variable δ in year *t*.

An intuitive understanding of equation (1) is that employment at a firm is a function of the firm's productivity and demand for the firm's output (embodied by the firm's revenue the previous year), the firm's size in terms of assets, and previous employment. The owner and firm characteristics controlled for are whether or not the firm owns intellectual property, whether or not the primary owner is male, and whether or not the primary owner is white. Given the lags specified in equation (1), analysis begins in 2005 which is also used as the base for the year dummies.

The empirical analysis proceeds in a general three-part strategy: (i) equation (1) is estimated without fixed effects; (ii) the equation is estimated with fixed effects; and (iii) a quantile regression is used to estimate equation (1) at a variety of points along the conditional distribution. The main variable of interest are the coefficients on the year dummies, as this yields an estimate of the impact that year had on employment and wages after controlling for the firm's characteristics and past performance.

4.2 Estimating the Impact onEmployment

The results from estimating equation (1) without fixed effects are shown in Table 4. Column (1) includes only the year dummies—their positive coefficients indicate that the average difference in log employment in a given year was relatively higher than the base year. Columns (2) and (3) repeat the estimation but with additional conditioning variables. As expected, the previous year's employment, assets, and revenues are statistically significant. The estimated coefficient on the dummy variable for intellectual property shows that, on average, log employment is 0.126 higher for firms which own intellectual property than for firms that do not own such property—this converts to about an additional 1.1 employees.The primary owner's gender is also statistically related with a firm's employment, with male ownership being associated with about an additional 1.1 employees as opposed to female ownership. Whether or not the primary owner's race is white does not have any statistical relationship with a firm's log employment.

The estimated coefficients on the year dummies are the main focus in this study. Referring to the results from column (3), the 2008 and 2009 year dummies are statistically significant and negative in sign. Converting to non-logged units, firm-level employment is, on average, reduced by 0.64 and 0.62 employees during the Great Recession years of 2008-09.[IV] These particular estimates are noteworthy on two accounts: first, the magnitude becomes especially large when one recalls that the KFS dataset is intended to be representative of all new firms in the U.S.; and, second, young firms typically have few employees to begin with. However, caution is necessary as it is possible that firm attrition during the Great Recession is biasing these estimates.

[IV] The calculation is based off of the unconditional panel mean employment of 2.4 employees. Separately, a series of Wald tests rejected the hypotheses that the coefficients on the 2008 and 2009 year dummies were identical to the other year dummy coefficients.

Column (4) in Table 4 estimates equation (1) using fixed effects. As noted by Zarutskie and Yang (2016), the inclusion of fixed effects helps mitigate the possibility that firm attrition is driving the statistical significance of the year dummies. Notably, the only year dummies that remain statistically significant are 2006, 2008, and 2009. As before,after converting to non-logged units the average firm-level employment is reduced by 0.25 and 0.27 employee during the Great Recession years of 2008 and 2009.

A point worth stressing is that the results discussed to this point illustrate how the various covariates—including the Great Recession years—are associated with the *conditionalmean* of firm-level employment. It remains to be seen how these covariates are associated with firm-level employment at other points along the conditional distribution. Simply put, were firms with employment levels above or below the conditional mean impacted by the Great Recession differently? A quantile regression is used to shed light on this question. Columns (5) through (8) in Table 4show the quantile regression results using the full set of covariates. Estimates are obtained at the 20^{th}, 40^{th}, 60^{th}, and 80^{th} quantiles of the conditional log employment distribution. The year dummies are statistically significant across all quantiles, with the exception of the 40^{th} quantiles for years 2010 and 2011.[V] For each quantile, the year dummies during the Great Recession have the largest impact on log employment. Interestingly, however, the year dummy coefficients during the Great Recession show considerable variation across the quantiles. This indicates the recession's impact on employment was most acutely felt at young firms with a relatively large number of employees. For example, an otherwise average young firm with 20 employees loosely corresponds to the 80^{th} quantile. The results obtained here indicate that employment at this hypothetical firm would decrease by 6.7 and 5.9 employees during the years of 2008 and 2009. In contrast, a firm with about 1.5 employees loosely corresponds to the 40^{th} quantile, in which case the predicted impact of the Great Recession is to reduce employment by 0.08 and 0.06 employees. Similar results occur at the 20^{th} quantile. Thus, while there is statistical significance associated with the Great Recession on employment, the quantile regression estimates suggest that the impact is not meaningful for a considerable portion of young firms.

4.3 Estimating the Impact on Wages

Firms under pressure to cut labor costs may choose to reduce wage expenses, particularly if employment consists of only a handful of essential employees. To investigate this possibility, equation (1) is estimated using the log wage per employee as the dependent variable. The regression results are shown in Table 5. Column (3) shows the estimated impact of the year dummies on a firm's log wage when controlling for the firm's performance in the previous year and demographics. In this case, there is no evidence that the Great Recession impacted wages. In column (4), the analysis is repeated but with fixed effects included. The estimated coefficients on the 2007, 2008, and 2009 year dummies are now statistically significant and positive in sign. That these coefficients become statistically significant only when fixed effects are included in the model implies that within-firm variation is driving the results. Indeed, Zarutskie and Yang (2016) obtained a similar finding and suggested the possibility that wages on a per employee basis increased because firms tended to keep their most skilled employees during the Great Recession, while letting less productive employees go.

Next, a quantile regression is estimated to investigate the impact of the Great Recession on the 20^{th}, 40^{th}, 60^{th}, and 80^{th} quantiles of the conditional log wage per employee distribution. Simply put, the quantile regression sheds insight into how the Great Recession impacted relatively high and low wage firms, in contrast to firms paying average wages on a per employee basis. The quantile regression results are shown in columns (5) through (8)**Error! Reference source not found.** in Table 5. Overall, the results do not appear to be particularly convincing that the Great Recession had a differential impact on the conditional log wage distribution. Further caution with the quantile regression results is warranted given the negative signs for some of the year dummies, whereas the covariate signs were positive in the fixed effects regression.

4.4 Estimating the Impact on Full-Time Employment

The results obtained thus far suggest that young firms cut total employment rather than wages during the Great Recession. In contrast, the analysis is now limited to considering strictly full-time employment.

[V] Interquantile range regressions were also run, testing for a statistical difference between the 20^{th} and 40^{th} quantiles, the 40^{th} and 60^{th} quantiles, and the 60^{th} and 80^{th} quantiles. In all cases, the coefficients on the year dummies were statistically different from one another.

Recall that the descriptive statistics in Table 2 revealed that, on average, firms employed 1.8 part-time employees in 2007, and that this figure did not decrease during the Great Recession. In contrast, an average firm employed 4.5 full-time employees in 2007, followed by 4.2 and 4.4 full-time employees in the following two years.

Table 6 reports estimates of equation (1) when log full-time employment is used as the dependent variable.[VI] Column (3) shows that although there is a general decline in full-time employment associated with all of the year dummies, the magnitude of is particularly large during 2008-09. Converting to non-logged units, full-time employment at a firm is reduced, on average, by 0.49 and 0.46 full-time employee during the years 2008 and 2009.[VII] Once fixed effects are added to the model, shown in column (4), the only year effects that are statistically significant are 2008 and 2009. The magnitude of these year effects is such that full-time employment, on average, declines by 0.15 and 0.13 workers.

Quantile regression estimated at the 20^{th}, 40^{th}, 60^{th}, and 80^{th} quantiles of the conditional log full-time employment distribution is reported in columns (5) through (8) in Table 6. The year dummies are statistically significant across all quantiles. For each quantile, the year dummies during the Great Recession have the largest impact on log full-time employment. And there is considerable variation across the quantiles associated with the years during the Great Recession, with the magnitude largest at the 80^{th} quantile. For example, an otherwise average young firm with 55 full-time employees loosely corresponds to the 80^{th} quantile. The results obtained here indicate that full-time employment at this hypothetical firm would decrease by 18.4 and 14.5 employees during the years of 2008 and 2009. In contrast, a firm with about 4 full-time employees loosely corresponds to the 40^{th} quantile, in which case the predicted full-time employment declines by 0.7 workers during each year in 2008-09.

Unlike the case for total employment, these quantile regression estimates suggest that the Great Recession is statistically and meaningfully associated with a decline in full-time employment at young firms, regardless of where they fall on the conditional distribution. More generally, the results obtained in this section indicate that the impact of the Great Recession on young firms largely occurred via a reduction in full-time employees—a finding that is similar to Zarutskie and Yang (2016). There is no conclusive evidence that part-time employment decreased, or increased, as a result of the Great Recession.

5. Summary

This study uses the Kauffman Firm Survey dataset to examine the impact of the Great Recession on per employee wages and employment at the firm level. Using panel regression with and without fixed effects, the findings obtained here suggest young firms responded to the Great Recession by cutting employment by about a quarter person on average. There is not compelling evidence that part-time employment and per employee wages were impacted by the Great Recession. Instead, the adjustment appears to largely occur through full-time employment. These findings are consistent with the presence of wage rigidities.

This study also employs quantile regression analysis to estimate the impact of the Great Recession on points of the conditional distribution other than the mean. These results suggest that larger firms, in terms of employee size, experienced the greatest reduction in employees during the Great Recession. Conversely, relatively small firms hardly experienced a reduction in employment. On the surface, these results are intuitive. Yet given that young firms in the KFS dataset tend to employ only a handful of employees, it remains an important question how these relatively small firms adjusted to the economic downturn. Although beyond the scope of this study, it is reasonable to suspect that the Great Recession resulted in a proportionally greater rate of attrition for these smaller firms than their larger counterparts. Another factor may be the extent to which a small firm has access to credit. Previous studies have identified credit market frictions as having played particularly important role for small businesses during the Great Recession (e.g., Chodorow-Reich, 2014). This very likely extends to the young firms that consist of the KFS dataset studied here.

At a broader level, this study contributes to a better understanding of employment dynamics at newly established firms during downturns in the business cycle. Entrepreneurs and small businesses play a vital role in the U.S. economy. A more nuanced understanding of labor market dynamics will not only lead to better economic policy making, but may also help entrepreneurs think strategically when strategically positioning their business for the next economic downturn.

[VI] Regressions were also run using the log part-time employment as a dependent variable, although they are excluded here for brevity. No evidence was found that part-time employment decreased during the Great Recession.

[VII] The calculation is based off of the unconditional panel mean of 2 full-time employees.

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7. Appendix

Table 1 - Status of Surveyed Firms

Status	2004	2005	2006	2007	2008	2009	2010	2011
In Business	4,928	3,998	3,390	2,915	2,606	2,408	2,126	2,007
Merged or Sold	n.a.	43	47	45	40	36	38	40
Out of Business	n.a.	260	321	299	344	250	218	209
Refusal	n.a.	561	743	825	816	743	776	676
Temporarily Stopped	n.a.	66	124	98	58	41	45	30
Hard Missing Value	n.a.	n.a.	303	671	1,015	1,399	1,685	1,941
Complete: No Data	n.a.	n.a.	n.a.	75	49	51	40	25

Note: Table values are the number of firms.

Table 2 – Firm-Level Economic Variables

Financials	2004	2005	2006	2007	2008	2009	2010	2011
Revenue ($1000s)	21.4	17.6	261.1	85.4	96.8	12.8	315.8	336.9
Profit ($1000s)	43.7	80.4	103.7	117.7	109.8	103.2	112.4	132.4
Debt ($1000s)	71.8	63.4	62.9	64.7	72.9	64.5	57.1	59.2
Assets ($1000s)	146.4	199.0	225.9	234.4	238.8	232.2	239.9	241.8
Wage ($1000s) Per Employee	33.4	50.5	61.6	66.27	73.29	75.49	73.81	77.3
No. Full-Time Employees	2.6	3.1	3.3	4.5	4.2	4.4	5.8	6.3
No. Part-Time Employees	1.2	1.4	1.4	1.8	1.8	1.9	2.0	2.0

Note: Table values are sample means.

Table 3– Primary Owner Characteristics

Category	Demographic	2004	2005	2006	2007	2008	2009	2010	2011
Gender	Female	1,279	1,032	833	704	626	562	492	460
	Male	3,647	2,944	2,492	2,128	1,881	1,736	1,527	1,435
Race	White	4,047	3,327	2,788	2,392	2,127	1,949	1,703	1,601
	Black	381	282	239	195	158	150	135	128
	Asian	179	135	109	96	84	76	74	71
	Other	308	232	189	149	138	123	107	94
Education	Less than a bachelor's degree	2387	1891	1535	1281	1142	1019	884	836
	Bachelor’s degree	1,209	974	830	716	628	579	512	470
	More than a bachelor's degree	1,329	1,111	960	835	737	700	623	589
Age Range	18-24	72	34	17	12	5	2	22	14
	25-34	795	518	373	246	179	132	262	212
	35-44	1,620	1,262	994	810	646	560	639	590
	45-54	1,452	1,219	1,059	902	840	754	646	609
	55-64	800	755	681	660	624	617	374	388
	65-74	157	165	173	177	189	211	70	78
	75 or older	24	23	28	25	24	22	6	4
Net Worth	Negative or zero net worth	n.a.	n.a.	n.a.	n.a.	179	157	128	123
	Between $1 and $50,000	n.a.	n.a.	n.a.	n.a.	365	325	282	260
	$50,001 to $100,000	n.a.	n.a.	n.a.	n.a.	339	297	273	250
	$100,001 to $250,000	n.a.	n.a.	n.a.	n.a.	488	443	392	358
	More than $250,000	n.a.	n.a.	n.a.	n.a.	1,085	1,031	911	870
Intellectual Right(s)	Firm Owns	540	453	407	342	302	256	242	214
	Form Does Note Own	3930	4156	4267	4344	4460	4526	4533	4576

Note: Table values are the number of firms. The surveys from 2004-2007 did not ask about the primary owner’s net worth.

Table 4–Total Employment Regressions

Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Without fixed effects			*Fixed effects*	*Quantile regression*			
					q20	q40	q60	q80
Year 2006	0.0608***	-0.164***	-0.178***	-0.0432*	-0.0910**	-0.0190*	-0.180***	-0.261***
	(0.0163)	(0.0235)	(0.0246)	(0.0261)	(0.0432)	(0.0115)	(0.0316)	(0.0457)
Year 2007	0.103***	-0.195***	-0.196***	-0.0240	-0.156***	-0.0246*	-0.166***	-0.208***
	(0.0177)	(0.0248)	(0.0262)	(0.0282)	(0.0517)	(0.0141)	(0.0370)	(0.0516)
Year 2008	0.0576***	-0.295***	-0.310***	-0.111***	-0.199***	-0.0554**	-0.265***	-0.406***
	(0.0184)	(0.0257)	(0.0270)	(0.0292)	(0.0589)	(0.0231)	(0.0335)	(0.0447)
Year 2009	0.0654***	-0.275***	-0.298***	-0.118***	-0.236***	-0.0393**	-0.227***	-0.347***
	(0.0193)	(0.0265)	(0.0279)	(0.0300)	(0.0485)	(0.0176)	(0.0345)	(0.0468)
Year 2010	0.134***	-0.170***	-0.189***	-0.0150	-0.118**	-0.0220	-0.153***	-0.232***
	(0.0202)	(0.0263)	(0.0278)	(0.0300)	(0.0469)	(0.0140)	(0.0337)	(0.0458)
Year 2011	0.157***	-0.208***	-0.226***	-0.0111	-0.110**	-0.0220	-0.195***	-0.306***
	(0.0206)	(0.0269)	(0.0285)	(0.0309)	(0.0498)	(0.0134)	(0.0300)	(0.0475)
Ln(Employment(t-1))		0.693***	0.691***	0.220***	0.867***	0.970***	0.899***	0.807***
		(0.00969)	(0.0103)	(0.0154)	(0.0132)	(0.00980)	(0.0156)	(0.0104)
Ln(Assets(t-1))		0.0497***	0.0492***	0.0258***	0.0416***	0.00444*	0.0357***	0.0272***
		(0.00557)	(0.00587)	(0.00784)	(0.0101)	(0.00232)	(0.00537)	(0.00768)
Ln(Revenue(t-1))		0.0486***	0.0512***	0.0353***	0.0453***	0.00444*	0.0262***	0.0429***
		(0.00599)	(0.00629)	(0.00861)	(0.0129)	(0.00232)	(0.00726)	(0.00745)
Intellectual Rights (0 no / 1 yes)			0.126***	0.122***	0.0202	0.0114	0.0814***	0.107***
			(0.0250)	(0.0362)	(0.0373)	(0.00856)	(0.0208)	(0.0293)
Male Owner (0 no / 1 yes)			0.0744***	-0.0500	0.0158	0.00669	0.0289	0.0493**
			(0.0254)	(0.404)	(0.0335)	(0.00471)	(0.0192)	(0.0246)
White Owner (0 no / 1 yes)			-0.0203	-	0.0730*	0.00587	-0.0388*	-0.0697**
			(0.0281)		(0.0374)	(0.00769)	(0.0235)	(0.0335)
Constant	0.677***	0.0346	-0.0264	0.643**	-0.556***	-0.0246**	0.0860*	0.533***
	(0.0193)	(0.0322)	(0.0424)	(0.327)	(0.0726)	(0.0118)	(0.0446)	(0.0500)
Observations	10,770	6,301	5,536	5,536	5,536	5,536	5,536	5,536

Notes: The dependent variable in each regression is the natural logarithm of a firm's total employment. The regressions shown in columns (1) to (3) are estimated without fixed effects; (4) with fixed effects; and (5) to (8) are quantile regressions estimated at the 20th, 40th, 60th, and 80th quantile respectively. Table values are the estimated coefficients (standard errors); *, **, and *** denote significance at the 10%, 5%, and 1% levels respectively.

Table 5 – Wage Regressions

Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Without fixed effects			*Fixed effects*	*Quantile regression*			
					q20	q40	q60	q80
Year 2006	0.241***	-0.0281	-0.0495	0.0932	-0.0116	-0.0207	-0.0966	-0.126**
	(0.0373)	(0.0491)	(0.0523)	(0.0572)	(0.0763)	(0.0868)	(0.0778)	(0.0608)
Year 2007	0.251***	-0.0917*	-0.0773	0.115*	-0.115	-0.129	-0.168**	-0.146*
	(0.0399)	(0.0517)	(0.0552)	(0.0613)	(0.0789)	(0.0901)	(0.0697)	(0.0748)
Year 2008	0.338***	-0.0395	-0.0401	0.168***	-0.105	-0.121	-0.127*	-0.0214
	(0.0415)	(0.0532)	(0.0568)	(0.0634)	(0.0754)	(0.0766)	(0.0675)	(0.0679)
Year 2009	0.261***	-0.109**	-0.0945	0.149**	-0.00895	-0.213***	-0.244***	-0.0960
	(0.0422)	(0.0545)	(0.0583)	(0.0650)	(0.0910)	(0.0730)	(0.0681)	(0.0742)
Year 2010	0.229***	-0.175***	-0.135**	0.0881	-0.233**	-0.231**	-0.187***	-0.0753
	(0.0440)	(0.0540)	(0.0579)	(0.0646)	(0.0969)	(0.0933)	(0.0717)	(0.0711)
Year 2011	0.225***	-0.175***	-0.170***	0.0342	-0.206**	-0.187**	-0.165**	-0.0960*
	(0.0447)	(0.0553)	(0.0595)	(0.0667)	(0.0812)	(0.0902)	(0.0801)	(0.0583)
Ln(Employment(t-1))		0.0270	0.0286	0.116***	-0.0337	-0.157***	-0.309***	-0.479***
		(0.0224)	(0.0239)	(0.0333)	(0.0279)	(0.0236)	(0.0301)	(0.0306)
Ln(Assets(t-1))		0.112***	0.109***	0.0458***	0.101***	0.117***	0.131***	0.0786***
		(0.0126)	(0.0134)	(0.0172)	(0.0222)	(0.0191)	(0.0218)	(0.0185)
Ln(Revenue(t-1))		0.223***	0.218***	0.0151	0.485***	0.418***	0.394***	0.354***
		(0.0141)	(0.0150)	(0.0195)	(0.0268)	(0.0237)	(0.0261)	(0.0310)
Intellectual Rights (0 no / 1 yes)			0.0894	0.0210	0.143**	0.151***	0.182***	0.111***
			(0.0581)	(0.0786)	(0.0641)	(0.0574)	(0.0495)	(0.0388)
Male Owner (0 no / 1 yes)			0.275***	0.241	0.194***	0.236***	0.166***	0.171***
			(0.0681)	(0.844)	(0.0678)	(0.0518)	(0.0573)	(0.0392)
White Owner (0 no / 1 yes)			0.206***	-	0.238***	0.0802	-0.0180	0.0463
			(0.0755)		(0.0701)	(0.0700)	(0.0659)	(0.0435)
Constant	9.906***	8.669***	8.307***	9.798***	6.033***	7.326***	8.343***	9.585***
	(0.0366)	(0.0806)	(0.110)	(0.688)	(0.134)	(0.123)	(0.126)	(0.147)
Observations	9,251	5,907	5,183	5,183	5,183	5,183	5,183	5,183

Notes: The dependent variable in each regression is the natural logarithm of a firm's average wage per employee. The regressions shown in columns (1) to (3) are estimated without fixed effects; (4) with fixed effects; and (5) to (8) are quantile regressions estimated at the 20th, 40th, 60th, and 80th quantile respectively. Table values are the estimated coefficients (standard errors); *, **, and *** denote significance at the 10%, 5%, and 1% levels respectively.

Table 6 – Full-Time Employment Regressions

Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Without fixed effects			*Fixed effects*	*Quantile regression*			
					q20	q40	q60	q80
Year 2006	0.0740***	-0.159***	-0.160***	-0.0266	-0.118***	-0.0825***	-0.170***	-0.240***
	(0.0173)	(0.0247)	(0.0258)	(0.0276)	(0.0443)	(0.0236)	(0.0415)	(0.0407)
Year 2007	0.125***	-0.186***	-0.163***	0.000726	-0.158***	-0.115***	-0.170***	-0.163***
	(0.0188)	(0.0263)	(0.0276)	(0.0299)	(0.0418)	(0.0257)	(0.0398)	(0.0485)
Year 2008	0.0968***	-0.287***	-0.284***	-0.0754**	-0.239***	-0.190***	-0.274***	-0.408***
	(0.0197)	(0.0274)	(0.0287)	(0.0313)	(0.0433)	(0.0277)	(0.0482)	(0.0466)
Year 2009	0.111***	-0.260***	-0.258***	-0.0657**	-0.212***	-0.190***	-0.223***	-0.306***
	(0.0205)	(0.0283)	(0.0296)	(0.0322)	(0.0589)	(0.0342)	(0.0457)	(0.0491)
Year 2010	0.184***	-0.166***	-0.166***	0.0162	-0.119**	-0.125***	-0.186***	-0.213***
	(0.0214)	(0.0280)	(0.0294)	(0.0320)	(0.0479)	(0.0299)	(0.0488)	(0.0507)
Year 2011	0.226***	-0.182***	-0.179***	0.0458	-0.0901*	-0.114***	-0.206***	-0.244***
	(0.0218)	(0.0288)	(0.0303)	(0.0334)	(0.0461)	(0.0321)	(0.0474)	(0.0517)
Ln(Employment(t-1))		0.617***	0.613***	0.234***	0.782***	0.860***	0.892***	0.785***
		(0.0108)	(0.0114)	(0.0165)	(0.0210)	(0.00793)	(0.0225)	(0.0109)
Ln(Assets(t-1))		0.0537***	0.0523***	0.0240***	0.0496***	0.0300***	0.0301***	0.0457***
		(0.00622)	(0.00650)	(0.00838)	(0.00888)	(0.00582)	(0.00963)	(0.00934)
Ln(Revenue(t-1))		0.0382***	0.0410***	0.0356***	0.00207	0.0178**	0.0215***	0.0255**
		(0.00682)	(0.00713)	(0.00955)	(0.00779)	(0.00717)	(0.00736)	(0.00993)
Intellectual Rights (0 no / 1 yes)			0.125***	0.124***	0.0920**	0.0482**	0.0826***	0.0791***
			(0.0268)	(0.0372)	(0.0357)	(0.0204)	(0.0232)	(0.0263)
Male Owner (0 no / 1 yes)			0.110***	0.121	0.104***	0.0658**	0.0526**	0.0714**
			(0.0301)	(0.392)	(0.0335)	(0.0264)	(0.0211)	(0.0308)
White Owner (0 no / 1 yes)			0.00309	-	0.0532	0.0533**	-0.0124	-0.00582
			(0.0324)		(0.0357)	(0.0252)	(0.0210)	(0.0304)
Constant	0.717***	0.0491	-0.0671	0.438	-0.531***	-0.241***	0.00764	0.392***
	(0.0192)	(0.0379)	(0.0501)	(0.325)	(0.0563)	(0.0454)	(0.0541)	(0.0578)
Observations	8,778	5,379	4,712	4,712	4,712	4,712	4,712	4,712

Notes: The dependent variable in each regression is the natural logarithm of a firm's employment of part-time workers. The regressions shown in columns (1) to (3) are estimated without fixed effects; (4) with fixed effects; and (5) to (8) are quantile regressions estimated at the 20th, 40th, 60th, and 80th quantile respectively. Table values are the estimated coefficients (standard errors); *, **, and *** denote significance at the 10%, 5%, and 1% levels respectively.