

Web Appendix for “Who Creates Jobs? Small vs. Large vs. Young”

By

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This web appendix includes background material and supplementary results from the paper “Who Creates Jobs? Small vs. Large vs. Young”.

I. The Firm-Level and Establishment-Level Growth Rate Distributions

Figure W.1 displays distributions of the DHS growth rates used in the paper. The upper panels of Figure W.1 show the unweighted distributions and the lower panels the employment weighted distributions of average annual establishment and firm level net employment growth over the 1992-2005 period. Several patterns stand out. First, the U.S. economy is extremely dynamic with large numbers of establishments and firms opening and closing at any given time – the masses at -2 (deaths) and 2 (births). At both the firm and the establishment levels, about 20 percent of establishments or firms are either entering or exiting in any given period. The unweighted distributions of firm and establishment growth rates look quite similar since the unweighted distributions are dominated by the large number of single unit establishment firms that tend to be small. The lower panels show somewhat different patterns for the firm and establishment growth distributions especially for entry and exit. The pace of employment-weighted establishment entry and exit is not surprisingly higher than the pace of employment-weighted firm entry and exit.

Second, beyond the role of entry and exit, in the weighted distributions there is substantial mass of employment at firms and establishments growing more rapidly than 15 percent per year and a substantial mass of employment at firms and establishments contracting

¹ Any opinions and conclusions expressed herein are those of the author(s) and do not necessarily represent the views of the U.S. Census Bureau. All results have been reviewed to ensure that no confidential information is disclosed.

more rapidly than 15 percent per year. The implication, along with the patterns of entry and exit, is that a large fraction of job creation is accounted for by high growth firms and establishments and a large fraction of job destruction is accounted for by rapidly contracting and exiting firms and establishments.

Third, high churning in the economy is combined with substantial inertia. Figure W.1 shows that approximately 30 percent of establishment-year and firm-year records in the LBD exhibit no change in net employment from one year to the next. The share of jobs at establishments characterized by zero employment growth account for approximately 13 percent of all jobs an indication that these establishments tend to be small. The share of jobs at firms with zero net growth rates account for about 7 percent indicating that some of these inactive establishments are part of larger firms that exhibit net changes.

It is interesting there is this much inertia at an annual frequency. Using BLS data, Davis, Faberman and Haltiwanger (2006) report that about 80 percent of establishments have zero net employment change at a monthly frequency and about 30 percent of employment is at establishments that have zero employment change at the monthly frequency.

II. Robustness of Main Results Using Establishment-Level Regressions

As a robustness check, we also estimate the equivalent employment-weighted establishment-level regressions to those reported in Table 2 in the main paper. Since the net employment growth rate for a given firm size or age category should be the same regardless of whether the net rate is calculated as the employment-weighted firm-level or employment-weighted establishment-level growth rate, we should obtain the same results. Except for small difference caused by differences across firm and establishment industry controls, we do obtain

the same results as reported in Table 2.² The establishment-level results are reported in Table W.1.

III. Additional Evidence on Regression to the Mean

It is useful to examine the serial correlation properties of net growth rates by firm size to provide perspective on why the choice of size classification methodology matters so much especially for the smallest businesses. Figure W.2 shows estimated serial correlation patterns for continuing firms using both the base size and current size classification methods.³ We focus on continuing firms since serial correlation is more of an issue for such firms.⁴ Interestingly, there is negative serial correlation in all size categories. This reflects the presence and importance of transitory shocks. That is, growth one year tends to be at least partially reversed the following year. However, it is also clear that the regression to the mean effects are more important for small businesses consistent with the view that small businesses face a higher variance of transitory (idiosyncratic) shocks. The negative correlation shows roughly similar patterns across size class methodology but a steeper decline in the absolute correlation with size class for our preferred measure. Recall that negative serial correlation generates a bias in favor of smaller size classes when using the base size class methodology and that estimates are relative to the largest size class.

² When we estimate the specifications without industry effects, we obtain identical results for the firm-level and establishment-level regressions consistent with the identities discussed in the text.

³ The figure plots the correlation between net growth in period t and $t-1$ by size class.

⁴ The patterns using all firms are very similar.

Figure W.1 Employment Growth Distributions: Weighted and Unweighted

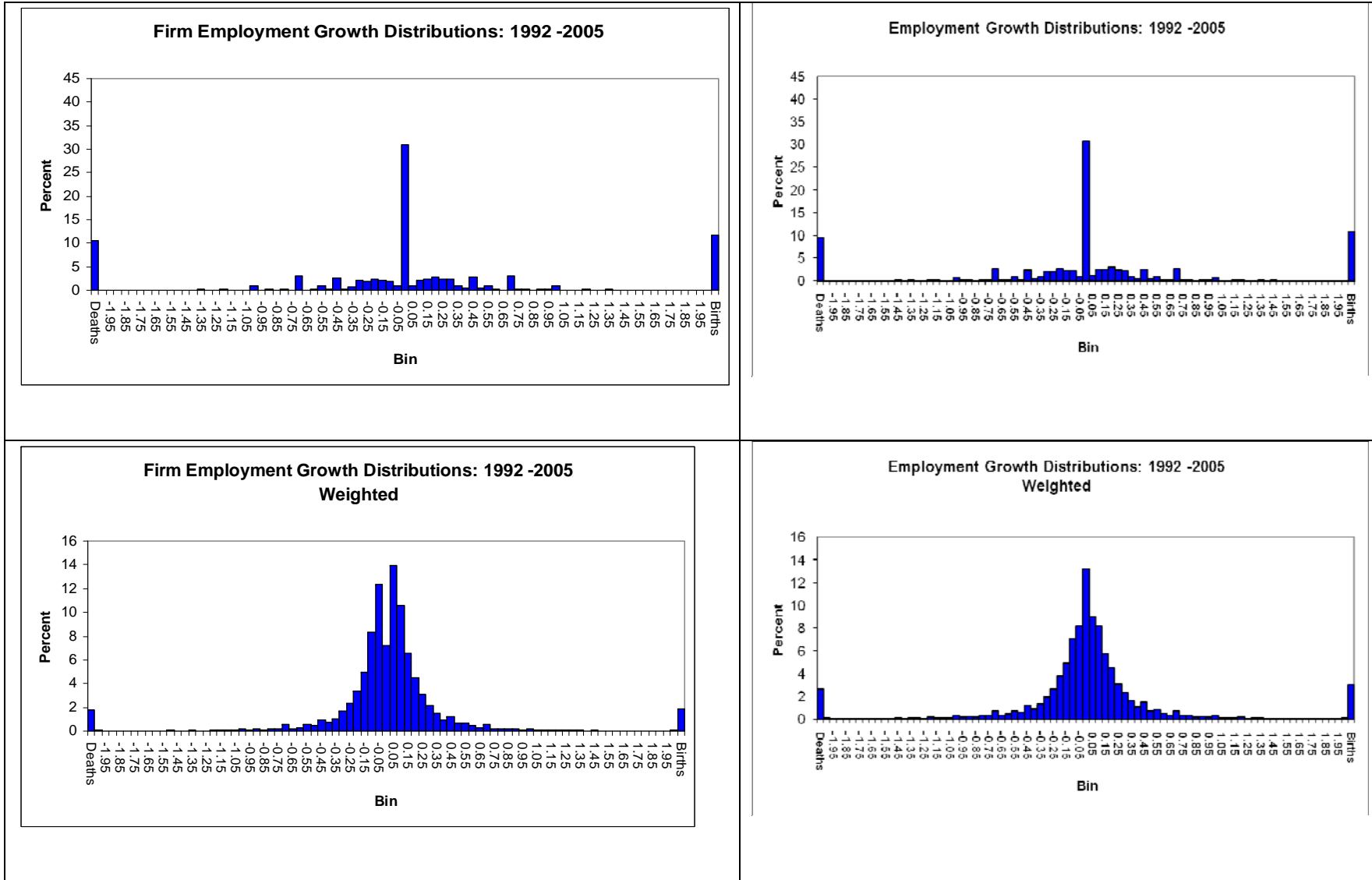


Figure W.2: Serial Correlation in Firm Employment Growth by Firm Size for Continuing Firms

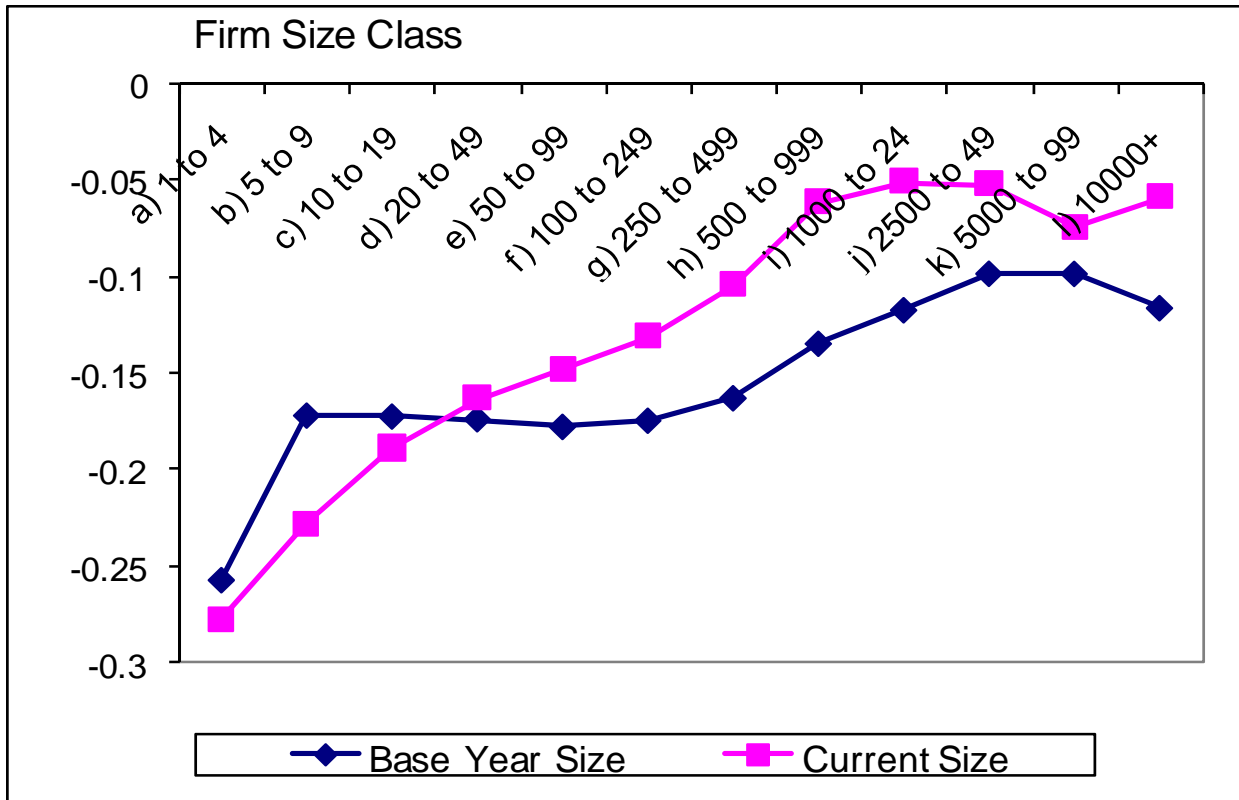


Table W.1: Establishment-Level Net Employment Growth Regressions

Parameter	(1) Base Size	(2) Current Size	(3) Age Only	(4) Base Size + Age	(5) Current Size + Age
Size a) 1 to 4	0.189	0.042		0.083	-0.190
Size b) 5 to 9	0.061	0.009		-0.011	-0.102
Size c) 10 to 19	0.033	0.006		-0.022	-0.075
Size d) 20 to 49	0.017	0.007		-0.024	-0.051
Size e) 50 to 99	0.009	0.011		-0.024	-0.034
Size f) 100 to 249	0.005	0.017		-0.021	-0.018
Size g) 250 to 499	0.002	0.016		-0.019	-0.007
Size h) 500 to 999	0.007	0.015		-0.006	-0.002
Size i) 1000 to 2499	0.006	0.015		-0.002	0.003
Size j) 2500 to 4999	0.008	0.015		0.001	0.009
Size k) 5000 to 9999	0.006	0.009		0.003	0.005
Size l) 10000+					
Age a. 0			1.995	1.985	2.074
Age b. 1			0.031	0.019	0.085
Age c. 2			-0.035	-0.041	0.012
Age d. 3			-0.025	-0.029	0.019
Age e. 4			-0.020	-0.023	0.020
Age f. 5			-0.017	-0.018	0.021
Age g. 6			-0.020	-0.021	0.015
Age h. 7			-0.014	-0.014	0.020
Age i. 8			-0.011	-0.011	0.021
Age j. 9			-0.013	-0.012	0.017
Age k. 10			-0.012	-0.011	0.016
Age l. 11			-0.005	-0.004	0.020
Age m. 12			-0.008	-0.006	0.016
Age n. 13			-0.002	0.000	0.021
Age o. 14			-0.003	-0.001	0.018
Age p. 15			-0.005	-0.003	0.014
Age u. 16+					
R2	0.026	0.022	0.184	0.185	0.188
Obs	92,974,732	92,974,732	92,974,732	92,974,732	92,974,732

Notes: Standard Errors for all estimates are below 0.0005