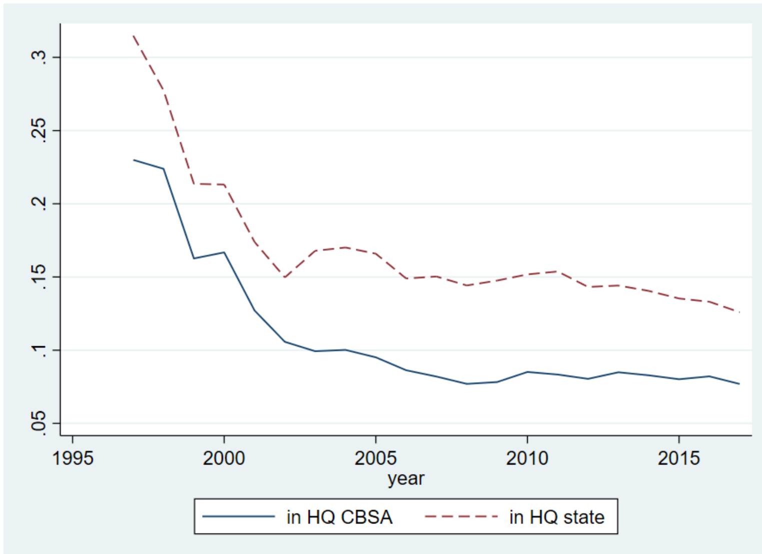
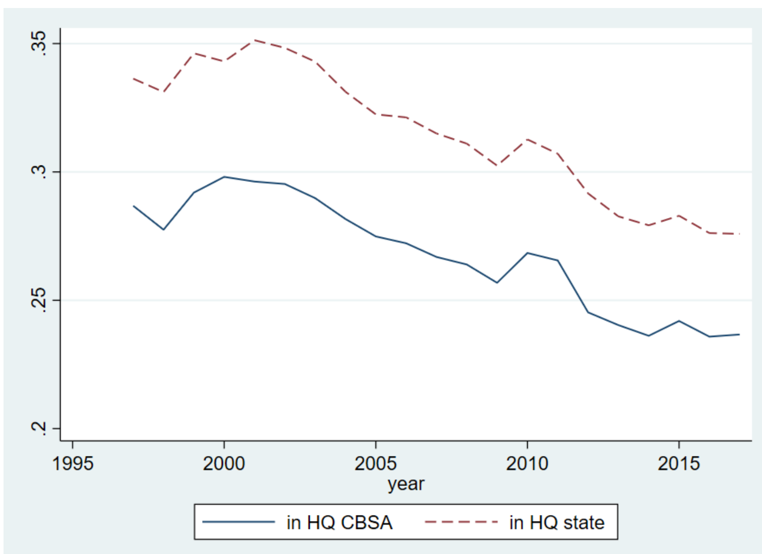
A. Internet Appendix for Flynn and Ghent (2022)

A. Additional Data Details



(a) Nontradable and construction



(b) Tradable and other

Figure A.1: Share of employment of publicly traded firms in headquarters location

Notes: Both panels use the YTS-Compustat merged data and plot the proportion of employees of publicly traded firms in the HQ state or CBSA for the average firm in each year. The top panel only includes nontradable and construction industries, and the bottom panel only includes tradable and other industries. Industry definitions are based on Mian and Sufi (2014).

Table A.1: Variable definitions

Variable	Description
compustat_share	Employment of Compustat firms within an industry or geographic region as a percent of total Compustat employment
bls_share	Employment of all firms within an industry or geographic region as a percent of total BLS employment
yts_share	Employment of all firms within an industry or geographic region as a percent of total YTS employment
exret	Excess log return of the value-weighted CRSP index
emp_change	Aggregate employment growth
rel_tb	Current quarter 3 month Treasury bill yield minus its prior four-quarter average
term	10-year Treasury yield minus 3-month Treasury yield
baa_aaa	Difference between Moody's Seasoned Baa and Aaa corporate bond yields
cay	Log consumption-to-aggregate wealth ratio of Lettau and Ludvigson (2001)
dp	Log of previous 12 months of dividends per share on the S&P 500 minus log of the current S&P 500 index level
gdp_change	Growth in seasonally-adjusted real GDP
d_wagereceived	Growth in aggregate wages
nextgrowth	Consensus forecast of next quarter employment growth from the Philadelphia Fed SPF data
CBSA emp gr (M)	Monthly employment growth at CBSA level
CBSA emp gr (Q)	Quarterly employment growth at CBSA level
CBSA emp gr (H)	Six-month employment growth at CBSA level
CBSA EWSR (M)	Monthly EWSR at CBSA level
CBSA EWSR (Q)	Quarterly EWSR at CBSA level
CBSA EWSR (H)	Six-month EWSR at CBSA level
Ind emp gr (M)	Monthly employment growth at NAICS4 level
Ind emp gr (Q)	Quarterly employment growth at NAICS4 level
Ind emp gr (H)	Six-month employment growth at NAICS4 level
Ind EWSR (M)	Monthly EWSR at NAICS4 level
Ind EWSR (Q)	Quarterly EWSR at NAICS4 level
Ind EWSR (H)	Six-month EWSR at NAICS4 level
CBSA total wage gr (Q)	Quarterly total wage growth at CBSA level
CBSA avg wk wage gr (Q)	Quarterly average weekly wage growth at CBSA level
Ind total wage gr (Q)	Quarterly total wage growth at NAICS4 level
Ind avg wk wage gr (Q)	Quarterly average weekly wage growth at NAICS4 level
CBSA $EWSR^{HQ}$ (Q)	Quarterly headquarters EWSR at the CBSA level (see equation 5)
Ind $EWSR^{HQ}$ (Q)	Quarterly headquarters EWSR at the NAICS4 level (see equation 5)
Ind Deviation	(compustat_share-bls_share)/bls_share at 4-digit NAICS level
CBSA Deviation	(compustat_share-bls_share)/bls_share at CBSA level

Table A.2: State-level differences between public (establishment-level) and total market share

State	1997		2007		2017	
	Compustat	BLS	Compustat	BLS	Compustat	BLS
AK	0.001	0.002	0.002	0.002	0.002	0.002
AL	0.015	0.015	0.015	0.014	0.015	0.013
AR	0.013	0.008	0.012	0.009	0.011	0.008
AZ	0.017	0.016	0.022	0.020	0.020	0.019
CA	0.103	0.114	0.101	0.116	0.104	0.119
CO	0.019	0.016	0.020	0.017	0.019	0.018
CT	0.019	0.013	0.014	0.012	0.013	0.011
DC	0.002	0.003	0.003	0.004	0.002	0.004
DE	0.004	0.003	0.003	0.003	0.003	0.003
FL	0.051	0.053	0.063	0.059	0.065	0.060
GA	0.034	0.029	0.037	0.030	0.036	0.030
HI	0.003	0.004	0.003	0.004	0.004	0.004
IA	0.010	0.011	0.011	0.011	0.011	0.011
ID	0.003	0.004	0.004	0.005	0.004	0.005
IL	0.047	0.048	0.048	0.044	0.044	0.042
IN	0.029	0.024	0.025	0.022	0.024	0.021
KS	0.012	0.010	0.011	0.010	0.011	0.009
KY	0.015	0.014	0.015	0.013	0.015	0.013
LA	0.015	0.014	0.014	0.013	0.014	0.013
MA	0.022	0.026	0.020	0.024	0.021	0.025
MD	0.017	0.018	0.016	0.018	0.016	0.018
ME	0.004	0.005	0.004	0.004	0.003	0.004
MI	0.034	0.036	0.031	0.031	0.027	0.030
MN	0.022	0.020	0.021	0.020	0.020	0.020
MO	0.022	0.022	0.021	0.020	0.022	0.019
MS	0.011	0.008	0.010	0.008	0.009	0.008
MT	0.002	0.003	0.002	0.003	0.003	0.003
NC	0.028	0.030	0.029	0.030	0.031	0.030
ND	0.002	0.002	0.002	0.002	0.002	0.003
NE	0.006	0.007	0.008	0.007	0.007	0.007
NH	0.004	0.004	0.004	0.004	0.005	0.004
NJ	0.024	0.030	0.026	0.029	0.026	0.028
NM	0.005	0.005	0.005	0.006	0.006	0.005
NV	0.009	0.007	0.017	0.010	0.013	0.009
NY	0.053	0.065	0.044	0.062	0.046	0.064
OH	0.058	0.045	0.048	0.040	0.042	0.038
OK	0.011	0.011	0.011	0.011	0.012	0.011
OR	0.009	0.013	0.011	0.013	0.011	0.013
PA	0.038	0.045	0.038	0.043	0.038	0.041
RI	0.003	0.003	0.003	0.003	0.003	0.003
SC	0.014	0.013	0.014	0.013	0.015	0.013
SD	0.002	0.003	0.002	0.003	0.002	0.003
TN	0.026	0.020	0.024	0.020	0.027	0.021
TX	0.085	0.072	0.084	0.078	0.088	0.085
UT	0.007	0.008	0.008	0.009	0.009	0.010
VA	0.027	0.026	0.028	0.027	0.030	0.026
VT	0.002	0.002	0.001	0.002	0.002	0.002
WA	0.017	0.021	0.018	0.022	0.022	0.023
WI	0.019	0.022	0.019	0.021	0.018	0.020
WV	0.005	0.005	0.005	0.005	0.005	0.005
WY	0.001	0.002	0.002	0.002	0.002	0.002

Notes: 1) Data underlying Figure 2. 2) All variables are defined in Table A.1.

Table A.3: 2-digit NAICS-level differences between public (establishment-level) and total market share

NAICS 2	1997		2007		2017	
	Compustat	BLS	Compustat	BLS	Compustat	BLS
11	0.000	0.011	0.001	0.009	0.001	0.009
21	0.014	0.005	0.011	0.005	0.007	0.005
22	0.021	0.008	0.014	0.006	0.013	0.006
23	0.006	0.052	0.008	0.062	0.006	0.052
31-33	0.361	0.156	0.237	0.111	0.184	0.093
42	0.026	0.048	0.037	0.048	0.036	0.044
44-45	0.204	0.129	0.280	0.124	0.274	0.119
48-49	0.027	0.044	0.021	0.042	0.021	0.044
51	0.060	0.029	0.045	0.025	0.049	0.022
52	0.092	0.047	0.101	0.048	0.103	0.044
53	0.036	0.017	0.023	0.017	0.044	0.016
54	0.017	0.052	0.027	0.061	0.016	0.068
56	0.014	0.061	0.016	0.067	0.015	0.069
61	0.002	0.085	0.003	0.094	0.001	0.094
62	0.022	0.120	0.024	0.135	0.043	0.159
71	0.005	0.016	0.008	0.018	0.007	0.019
72	0.090	0.084	0.141	0.091	0.175	0.102
81	0.003	0.035	0.005	0.036	0.004	0.033

Notes: 1) Data underlying Figure 3. 2) All variables are defined in Table A.1.

B. Are Public Firms Representative of All Firms Within an Industry?

Publicly traded firms are significantly overrepresented in some industries and underrepresented in others, but if public and private firms are similar *within* industries, this may indicate that the market would be a good predictor of total employment changes. For example, public firms are underrepresented in healthcare, but if public healthcare firms are similar to private healthcare firms, then information about public healthcare firms that is capitalized in stock returns may be correlated with information about private firms. Thus, we may be able to make strong inferences from stock market data about broader industry trends. Indeed, Yan (2020) finds that private firms make investment decisions based on the stock market returns of public firms in the same industry. Furthermore, if public firms within an industry are representative of the private firms in that industry, it may be less important to include private equity in a well-diversified portfolio.

We assess the similarity between public and private firms within industries by focusing on employment dynamics. Specifically, we examine whether employment growth in publicly traded firms differs significantly from employment growth in private firms. To do so, we regress annual firm-level employment growth[24] on industry fixed effects (where industry is based on the firm's headquarters' NAICS code), year fixed effects, size and age fixed effects,[25] and an indicator variable for whether the firm is public (*public*). Table A.4 contains the results.[26] The variable *public* and the size and age categories are all lagged one year (denoted by the prefix "L."). As the positive and statistically significant coefficients on *public* in columns 1 and 2 show, public firms have faster employment growth than private firms even after we account for firm size, firm age, and industry and year effects.

In columns 3-4, we also include, as controls, industry-times-*public* interaction terms, which are constructed by interacting the variable *public* with the indicators for each of the 2-digit NAICS codes. In these two specifications, we drop the standalone *public* variable. The coefficients for the interaction terms from column 4 of Table A.4 (the

[24]We use annual frequency data because private firm employment from YTS is only available annually. For multi-establishment firms we sum employment across all establishments.

[25]Firm size categories are 1-9 employees, 10-49 employees, 50-99 employees, 100-499 employees, and 500+ employees; age categories are 1 year, 2-5 years, 6-10 years, 11-25 years, and 26+ years.

[26]We only include firm-years with five or more employees in the regressions, as firms with fewer than five employees have a very low probability of being public.

most stringent specification) are reported individually in Table A.5. Each interaction term captures how being public *within* that industry relates to employment growth. For example, the "Healthcare" coefficient represents the coefficient on the $public \times NAICS62$ term. The positive sign indicates that, within the healthcare industry, public firms experience greater employment growth than private firms after controlling for size, age, year, and industry-wide fixed effects.

As Table A.5 illustrates, most of the signs on *public* interaction terms are positive, indicating that public firms grow significantly faster than private firms within most industries. This conclusion is consistent with the finding in Feldman, Kawano, Patel, Rao, Stevens, and Edgerton (2021) that observationally similar public firms invest more than private firms. While we do not have extensive information on the private firms in our dataset, the results are consistent with private firms having different growth dynamics than public firms, such that a portfolio that excludes private equity is unlikely to span the market. Brown, Hu, and Kuhn (2019) show more formally that including investment in private equity funds improves portfolio Sharpe ratios.

In summary, even within individual industries (including ones that are underrepresented in public markets), the employment dynamics of publicly traded firms are significantly different than those of private firms. This finding, along with the fact that the industrial composition of publicly traded firms is dissimilar to that of all US firms, is somewhat puzzling given the results in Section IV on the predictive power of aggregate stock returns for employment.

Table A.4: Employment growth in public firms by industry

	1	2	3	4
L.Public	0.0045***	0.023***	X	X
	(0.00090)	(0.00093)		
L.emp2		-0.026***		-0.026***
		(0.000037)		(0.000037)
L.emp3		-0.025***		-0.025***
		(0.000079)		(0.000079)
L.emp4		-0.034***		-0.034***
		(0.00012)		(0.00012)
L.emp5		-0.044***		-0.045***
		(0.00040)		(0.00040)
L.age2		-0.014		-0.014
		(0.014)		(0.014)
L.age3		-0.014		-0.014
		(0.014)		(0.014)
L.age4		-0.0054		-0.0054
		(0.014)		(0.014)
L.age5		-0.0044		-0.0045
		(0.014)		(0.014)
Observations	61,574,795	61,574,795	61,574,795	61,574,795
R^2	0.005	0.015	0.005	0.015
Year FEs	Yes	Yes	Yes	Yes
Industry FEs	Yes	Yes	Yes	Yes
Industry$\times$*public* indicators	No	No	Yes	Yes
SE Clust by Firm	Yes	Yes	Yes	Yes

Notes: Results of estimating linear regressions of annual employment growth on controls and fixed effects. Data are from Compustat and YTS from 1997 to 2017. Only firm-years with five or more employees are included. Variables prefixed by "L." are lagged one year. *public* is equal to 1 if the firm-year is public and 0 otherwise, *emp2* is equal to 1 for 10-49 employees, *emp3* is equal to 1 for 50-99 employees, *emp4* is equal to 1 for 100-499 employees, and *emp5* is equal to 1 for 500+ employees. *age2* is equal to 1 for 2-5 years, *age3* is equal to 1 for 6-10 years, *age4* is equal to 1 for 11-25 years, and *age5* is equal to 1 for 26+ years. All other variables are defined in Table A.1. Variables are winsorized at the 1% level in each tail. $***p < 0.01$, $**p < 0.05$, and $*p < 0.1$. Standard errors are clustered by firm.

Table A.5: Employment growth in public firms by industry

2D NAICS	Coeff	2D NAICS	Coeff
Ag	0.042*	Real Est	0.035***
	(0.026)		(0.0047)
Mining	0.0099	Tech	0.022***
	(0.0066)		(0.0022)
Utilities	0.0068	Mgmt	0.041***
	(0.012)		(0.0019)
Construction	-0.011	Admin	0.035***
	(0.011)		(0.0037)
Manufacturing	-0.0071***	Education	0.028***
	(0.0026)		(0.0092)
Whole Trade	0.0086***	Healthcare	0.043***
	(0.0033)		(0.0047)
Retail Trade	0.023***	Entertainment	0.020***
	(0.0036)		(0.0071)
Transp	0.024***	Hospitality	0.056***
	(0.0062)		(0.0055)
Info	0.012**	Other	0.044***
	(0.0049)		(0.0028)
Finance	0.0089**		
	(0.0036)		

Notes: Coefficients on the 2-digit NAICS industry × *public* variables from column 4 of Table A.4. Data are from Compustat and YTS from 1997 to 2017. Only firm-years with five or more employees are included. All variables are defined in Table A.1. Variables are winsorized at the 1% level in each tail. $***p < 0.01$, $**p < 0.05$, and $*p < 0.1$. Standard errors are clustered by firm.

C. Why Does the Industrial Composition of Public Firms Differ from that of all Firms?

Building on the findings in Figures 3 and 5, this section addresses *why* certain industries are overrepresented or underrepresented in public firms relative to their share of employment in the US economy. One possibility is that certain industries are characterized by larger or older firms, which are more likely to be publicly traded. If this is the case, then firm size and age should explain the differences in industrial composition. On the other hand, there may be certain industries that are underrepresented for other reasons.

We investigate this by aggregating the YTS data to the firm-year level and then estimating regressions in which the dependent variable takes a value of 1 if the firm-year is publicly traded and 0 otherwise. We estimate these regressions using various combinations of firm characteristics, including firm size fixed effects, firm age fixed effects, and year and two-digit NAICS fixed effects, where industry is based on the firm's headquarters NAICS code.

Table A.6 presents the results of probit regressions. Firm size categories are 1-9 employees, 10-49 employees, 50-99 employees, 100-499 employees, and 500+ employees, and age categories are 1 year, 2-5 years, 6-10 years, 11-25 years, and 26+ years. Column 1 includes size indicator variables only (with the excluded category being 1-9 employees), column 2 adds age indicator variables (with 1 year being the excluded category), column 3 adds year indicators (with 1997 being the excluded category), and column 4 adds industry indicators (with agriculture being the excluded category). The employment and age categories are positive and significant across specifications, which is consistent with larger, more mature firms being more likely to be publicly traded.

Despite larger and older firms having a higher probability of being public, size and age do not entirely explain the difference in the industry composition of public firms relative to all firms. Table A.7 displays the coefficients, labeled according to 2-digit NAICS code, for the industry indicators in column 4 of Table A.6. For example, the coefficient on the Education indicator variable, which is among the most underrepresented industries in Figures 3 and 5, is negatively correlated with the probability of being public. The coefficients are nearly all significant, indicating that industry effects, controlling for size and age, are also correlated with the likelihood of being public.

Table A.6: Likelihood of being public

	1	2	3	4
emp2	0.00036***	0.00017***	0.00017***	0.00012***
	(6.1e-06)	(3.7e-06)	(3.7e-06)	(2.5e-06)
emp3	0.0021***	0.00095***	0.00094***	0.00076***
	(0.000025)	(0.000014)	(0.000014)	(0.000011)
emp4	0.011***	0.0048***	0.0048***	0.0037***
	(0.000074)	(0.000038)	(0.000038)	(0.000033)
emp5	0.12***	0.061***	0.061***	0.058***
	(0.00058)	(0.00033)	(0.00033)	(0.00033)
age2		0.000038***	0.000042***	0.000047***
		(8.3e-06)	(8.2e-06)	(6.0e-06)
age3		0.000077***	0.000081***	0.000081***
		(9.7e-06)	(9.7e-06)	(7.3e-06)
age4		0.000094***	0.000097***	0.000087***
		(7.6e-06)	(7.6e-06)	(5.3e-06)
age5		0.00076***	0.00080***	0.00061***
		(0.000030)	(0.000031)	(0.000024)
Observations	227,175,079	227,175,079	227,175,079	227,175,079
Pseudo-R^2	0.35	0.38	0.38	0.43
Time FE	N	N	Y	Y
Ind FE	N	N	N	Y
SE Clust by Firm HQ	Y	Y	Y	Y

Notes: 1) Results of estimating probit regressions of an indicator for whether a firm-year is public on size, age, year, and industry controls. Marginal effects are reported. Data is from Compustat and YTS from 1997-2017. 2) *emp2* is equal to 1 for 10-49 employees, *emp3* is equal to 1 for 50-99 employees, *emp4* is equal to 1 for 100-499 employees, and *emp5* is equal to 1 for 500+ employees. *age2* is equal to 1 for 2-5 years, *age3* is equal to 1 for 6-10 years, *age4* is equal to 1 for 11-25 years, and *age5* is equal to 1 for 26+ years. All other variables are defined in Table A.1. Variables are winsorized at the 1% level in each tail. 3) $***p < 0.01$, $**p < 0.05$, and $*p < 0.1$. Standard errors are clustered by firm.

Table A.7: Industries and the likelihood of being public

2D NAICS	Coeff	2D NAICS	Coeff
Mining	0.0063***	Real Est	0.00027***
	(0.00045)		(0.000045)
Utilities	0.00034***	Tech	0.00031***
	(0.000062)		(0.000045)
Construction	5.1e-06	Mgmt	0.0088***
	(0.000012)		(0.00057)
Manufacturing	0.00021***	Admin	0.00021***
	(0.000039)		(0.000039)
Whole Trade	0.00020***	Education	-0.000020***
	(0.000037)		(6.2e-06)
Retail Trade	0.000075***	Healthcare	1.1e-06
	(0.000021)		(0.000012)
Transp	0.000097***	Entertainment	0.000063***
	(0.000027)		(0.000023)
Info	0.00043***	Hospitality	0.000034*
	(0.000062)		(0.000017)
Finance	0.00052***	Other	0.000082***
	(0.000069)		(0.000022)

Notes: 1) 2-digit NAICS industry indicator variable coefficients from column 4 of Table A.6. Marginal effects are reported. Data is from Compustat and YTS from 1997-2017. 2) All variables defined in Table A.1. Variables are winsorized at the 1% level in each tail. 3) $***p < 0.01$, $**p < 0.05$, and $*p < 0.1$. Standard errors are clustered by firm.

D. Sensitivity Analysis

We estimate a number of alternative specifications using the quarterly frequency data and report the results in Table A.8. First, we weight our regressions by either CBSA or industry size (measured as the total number of employees in that CBSA or industry relative to total employment overall). The results, reported in columns 1 and 4, indicate that the relation between EWSR and employment growth is not sensitive to weighting. Second, we use raw excess returns instead of Fama-French five-factor abnormal returns. These results, reported in columns 2 and 5, indicate that the main results hold when using raw returns. Third, we estimate equation 3 without winsorizing the dependent variable (employment growth). The results, reported in columns 3 and 6, indicate that our main results are not sensitive to winsorization.

Our next robustness test features our baseline specification, equation 3, estimated with the addition of the CRSP value-weighted excess return as a control variable. This test allows us to gauge the extent to which changes in local/industry employment are related to aggregate returns relative to $EWSR$. The results are reported in Table A.8, columns 4 and 8. Consistent with the aggregate results, the market excess return $exret$ is positive and significant for local- and industry-level employment growth. However, the $EWSR$ remains significant and of a similar magnitude relative to the baseline results, confirming that locally weighted returns have incremental predictive power for local employment.

Finally, we examine whether our results are sensitive to the sign of returns. Employment may increase faster than it decreases if it is more difficult to lay off workers than to hire them. In such a case, the current quarter $EWSR$ may have stronger predictive power for one-period-ahead employment growth when the abnormal returns are positive, whereas one- or two-quarter lagged $EWSR$ may have stronger predictive power when returns are negative. We estimate the sensitivity of the main results to the sign of returns by defining an indicator variable, $PosEWSR$, equal to 1 when the level of the abnormal return is positive, and 0 when it is nonpositive. We then interact this term with $EWSR$. Columns 5 and 10 of Table A.8 report the results. $EWSR$ remains significant at the industry level and becomes only marginally insignificant at the city level. In contrast, the interaction term $EWSR \times PosEWSR$ is insignificant across specifications. This suggests that employment growth when returns are positive is not significantly different than employment growth when returns are negative.

Table A.8: Sensitivity analysis of employment growth regressions

	One-quarter ahead CBSA employment growth					One-quarter ahead NAICS4 employment growth				
	1	2	3	4	5	6	7	8	9	10
EWSR (Q)	0.0090**		0.014***	0.010***	0.0081	0.013***		0.011***	0.014***	0.011**
	(0.0037)		(0.0037)	(0.0025)	(0.0060)	(0.0031)		(0.0035)	(0.0029)	(0.0051)
EWSR (Q) (Raw)		0.016***					0.021***			
		(0.0025)					(0.0025)			
exret				0.013***					0.034***	
				(0.00086)					(0.0020)	
PosEWSR (Q)					0.00033					0.00039
					(0.00022)					(0.00041)
EWSR × PosEWSR					0.068					-0.0035
					(0.061)					(0.042)
L.emp gr (Q)	-0.014*	-0.098***	-0.12***	-0.078***	-0.097***	0.14***	0.043***	-0.0082	0.093***	0.055***
	(0.0073)	(0.0059)	(0.0082)	(0.0058)	(0.0059)	(0.021)	(0.014)	(0.024)	(0.014)	(0.014)
L2.emp gr (Q)	0.017***	-0.021***	-0.048***	0.0083	-0.020***	0.065***	0.0041	-0.14***	0.035***	0.010
	(0.0062)	(0.0054)	(0.0064)	(0.0053)	(0.0055)	(0.016)	(0.013)	(0.023)	(0.012)	(0.013)
L3.emp gr (Q)	0.016**	-0.025***	-0.048***	-0.0066	-0.024***	0.065***	0.055***	0.031	0.091***	0.058***
	(0.0062)	(0.0054)	(0.0076)	(0.0052)	(0.0054)	(0.019)	(0.012)	(0.020)	(0.012)	(0.012)
L.EWSR (Q)	0.014***		0.014***	0.029***	0.016**	0.0100***		0.017***	0.016***	0.021***
	(0.0036)		(0.0038)	(0.0024)	(0.0063)	(0.0032)		(0.0035)	(0.0030)	(0.0051)
L2.EWSR (Q)	0.0042		0.023***	-0.0053**	0.020***	0.0088***		0.025***	0.015***	0.019***
	(0.0037)		(0.0037)	(0.0023)	(0.0057)	(0.0034)		(0.0038)	(0.0029)	(0.0049)
L.EWSR (Q) (Raw)		0.017***					0.021***			
		(0.0027)					(0.0024)			
L2.EWSR (Q) (Raw)		0.014***					0.019***			
		(0.0025)					(0.0024)			
L.exret				0.012***					0.021***	
				(0.00090)					(0.0018)	
L2.exret				0.012***					0.023***	
				(0.00083)					(0.0018)	
L.PosEWSR (Q)					-0.00022					0.000043
					(0.00022)					(0.00041)
L2.PosEWSR (Q)					0.00033					-0.000067
					(0.00022)					(0.00040)
L.EWSR × PosEWSR					-0.012					-0.080*
					(0.060)					(0.042)
L2.EWSR × PosEWSR					-0.099*					-0.034
					(0.058)					(0.041)
Time FE	Y	Y	Y	N	Y	Y	Y	Y	N	Y
CBSA x Cal Q FE	Y	Y	Y	Y	Y	N	N	N	N	N
NAICS4 x Cal Q FE	N	N	N	N	N	Y	Y	Y	Y	Y
Returns	Abnormal	Raw	Abnormal	Abnormal	Abnormal	Abnormal	Raw	Abnormal	Abnormal	Abnormal
Weighted by City Size	Y	N	N	N	N	N	N	N	N	N
Weighted by NAICS Size	N	N	N	N	N	Y	N	N	N	N
LHS Winsorized	Y	Y	N	Y	Y	Y	Y	N	Y	Y

Notes: 1) Results of estimating linear regressions of employment growth on EWSR and controls. The dependent variable is measured over the period following when EWSR is measured. All EWSRs are computed using log returns. An observation in columns 1-3 is a CBSA-period, and an observation in columns 4-6 is a 4-digit NAICS industry-period, and we limit the CBSA data to CBSA-periods with greater than 10,000 total employees. Data are from Compustat, BLS, and YTS from 1997-2017. 2) All variables are defined in Table A.1. Right-hand-side variables are winsorized at the 1% level in each tail. 3) $***p < 0.01$, $**p < 0.05$, and $*p < 0.1$. Heteroscedasticity robust standard errors are reported.

E. Heterogeneity in Results by City Characteristics

To investigate whether labor markets in particular cities respond differently to stock market returns, we undertake several exercises. Unlike the industry analysis in Table VI, where we included multiple 4-digit NAICS industries in broad 2-digit NAICS sectors, it is not feasible to estimate separate regressions for each city. Therefore, we categorize cities based on several characteristics. First, guided by the results of the industry analysis, we examine whether returns have greater predictive power for cities with a high share of manufacturing employment. We estimate the share of total employment comprised of NAICS sectors 31-33 for each CBSA-year, and then we define an indicator variable called $Highmnf$ that is equal to 1 when a CSBA has a manufacturing employment share greater than one-third in the previous year, and 0 otherwise. We then reestimate our baseline quarterly CBSA specification using this interaction term in order to capture the incremental predictive power of returns when the share of manufacturing jobs is high. The results are reported in Table A.9. Consistent with the results in Table VI, cities with a large proportion of total jobs in manufacturing see incrementally higher employment and wage growth as returns increase, as evidenced by the positive and significant coefficients on I(highmnf) $\times$EWSR across specifications.

In addition to heterogeneity that depends on manufacturing employment, we investigate whether cities exhibit heterogeneity in terms of the labor market-EWSR relation along four other dimensions: city size, changes in the labor share, representativeness, and education levels. To measure size, we define an indicator called $LargeCBSA$ that is equal to 1 when a city has a population of 250,000 or more in a given year, and 0 otherwise. We measure the other three characteristics using variables analogous to $I(LSdecrease)$, $I(Highed)$, and $Deviation$, which are defined in Section A.[27] The results of interacting city EWSR with these four variables are reported in Table A.10. Although larger cities have lower employment and wage growth on average, returns predict labor market outcomes more strongly in larger cities (see columns 1-3). Additionally, columns 4-6 show that the EWSR-labor market relation is stronger in cities that are more overrepresented in public markets. Despite this heterogeneity along size and representativeness dimensions, columns 7-12 indicate that cities with declining labor shares or higher levels of education do not experience a significantly different labor market-returns relation compared to cities with increase labor shares or lower levels of education.

[27]To measure city-level educational attainment, we use the 2005 ACS data; therefore, our results in the education regressions are based on a sample from 2005-2017.

Table A.9: City labor markets and stock returns based on manufacturing employment share

	Emp	Tot wg	Avg wk wg
	1	2	3
EWSR (Q)	0.013***	0.016***	0.012**
	(0.0033)	(0.0058)	(0.0046)
I(highmnf)	-0.0021***	-0.0040***	-0.0011*
	(0.00043)	(0.00073)	(0.00060)
I(highmnf) × EWSR	0.019**	0.025*	0.025**
	(0.0077)	(0.013)	(0.011)
L.emp gr (Q)	-0.097***		
	(0.0059)		
L2.emp gr (Q)	-0.021***		
	(0.0055)		
L3.emp gr (Q)	-0.025***		
	(0.0054)		
L.EWSR (Q)	0.013***	0.032***	0.019***
	(0.0032)	(0.0056)	(0.0043)
L2.EWSR (Q)	0.019***	0.043***	0.025***
	(0.0031)	(0.0056)	(0.0044)
L.total wage gr (Q)		-0.40***	
		(0.0076)	
L2.total wage gr (Q)		-0.033***	
		(0.0079)	
L3.total wage gr (Q)		-0.14***	
		(0.0065)	
L.avg wk wage gr (Q)			-0.64***
			(0.0060)
L2.avg wk wage gr (Q)			-0.31***
			(0.0073)
L3.avg wk wage gr (Q)			-0.30***
			(0.0064)
Observations	64,206	61,269	61,269
R^2	0.654	0.867	0.871
Time FE	Y	Y	Y
CBSA x Cal Q FE	Y	Y	Y

Notes: 1) Results of estimating linear regressions of employment growth on EWSR and controls. The dependent variable is measured over the period following when EWSR is measured. The variable $I(highmnf)$ is equal to 1 when the share of total city employment comprised by manufacturing jobs is greater than one-third in the previous year, and 0 otherwise. All EWSRs computed using log returns. An observation is a CBSA-period, and we limit the data to CBSA-periods with greater than 10,000 total employees. Data are from Compustat, BLS, and YTS from 1997 to 2017. 2) All variables are defined in Table A.1. Variables are winsorized at the 1% level in each tail. 3) $***p < 0.01$, $**p < 0.05$, and $*p < 0.1$. Heteroscedasticity robust standard errors are reported.

Table A.10: City labor markets and stock returns based on other characteristics

	Emp	Tot wg	Avg wk wg	Emp	Tot wg	Avg wk wg	Emp	Tot wg	Avg wk wg	Emp	Tot wg	Avg wk wg
	1	2	3	4	5	6	7	8	9	10	11	12
EWSR	0.015***	0.017***	0.014***	0.017***	0.023***	0.018***	0.012***	0.018***	0.013***	0.019***	0.023*	0.025***
	(0.0032)	(0.0057)	(0.0046)	(0.0031)	(0.0057)	(0.0046)	(0.0038)	(0.0063)	(0.0052)	(0.0060)	(0.012)	(0.0096)
I(LargeCBSA) × EWSR	0.012**	0.023**	0.010									
	(0.0052)	(0.0098)	(0.0084)									
Deviation × EWSR				0.019***	0.050***	0.035***						
				(0.0065)	(0.011)	(0.0092)						
I(LSDecrease) × EWSR							0.0092*	0.0046	0.0051			
							(0.0047)	(0.0078)	(0.0063)			
I(Highed) × EWSR										-0.0030	0.029**	0.010
										(0.0063)	(0.013)	(0.010)
I(LargeCBSA)	-0.0024***	-0.0039**	-0.00034									
	(0.00067)	(0.0016)	(0.0013)									
Deviation				0.0014***	-0.0037***	-0.0019***						
				(0.00042)	(0.00074)	(0.00062)						
L.emp gr (Q)	-0.097***			-0.097***			-0.098***			-0.033***		
	(0.0059)			(0.0059)			(0.0060)			(0.012)		
L2.emp gr (Q)	-0.020***			-0.021***			-0.020***			0.045***		
	(0.0055)			(0.0055)			(0.0055)			(0.010)		
L3.emp gr (Q)	-0.024***			-0.024***			-0.024***			0.012		
	(0.0054)			(0.0054)			(0.0055)			(0.010)		
L.EWSR (Q)	0.013***	0.032***	0.019***	0.013***	0.033***	0.019***	0.013***	0.032***	0.020***	0.012**	0.029***	0.023***
	(0.0032)	(0.0056)	(0.0043)	(0.0032)	(0.0056)	(0.0043)	(0.0033)	(0.0057)	(0.0044)	(0.0054)	(0.011)	(0.0083)
L2.EWSR (Q)	0.019***	0.043***	0.025***	0.019***	0.043***	0.026***	0.019***	0.043***	0.026***	0.015***	0.061***	0.046***
	(0.0031)	(0.0056)	(0.0044)	(0.0031)	(0.0055)	(0.0044)	(0.0032)	(0.0056)	(0.0044)	(0.0053)	(0.011)	(0.0084)
L.total wage gr (Q)		-0.40***			-0.40***			-0.40***			-0.41***	
		(0.0076)			(0.0076)			(0.0077)			(0.015)	
L2.total wage gr (Q)		-0.032***			-0.033***			-0.028***			0.017	
		(0.0078)			(0.0078)			(0.0079)			(0.013)	
L3.total wage gr (Q)		-0.14***			-0.14***			-0.14***			-0.11***	
		(0.0065)			(0.0065)			(0.0066)			(0.012)	
L.avg wk wage gr (Q)			-0.64***			-0.64***			-0.64***			-0.66***
			(0.0060)			(0.0060)			(0.0061)			(0.012)
L2.avg wk wage gr (Q)			-0.31***			-0.31***			-0.31***			-0.26***
			(0.0073)			(0.0073)			(0.0074)			(0.014)
L3.avg wk wage gr (Q)			-0.30***			-0.30***			-0.30***			-0.27***
			(0.0064)			(0.0064)			(0.0065)			(0.012)
Observations	64,294	61,269	61,269	64,284	61,269	61,269	62,686	59,809	59,809	16,830	16,830	16,830
R^2	0.654	0.867	0.871	0.654	0.867	0.871	0.652	0.866	0.870	0.775	0.903	0.914
Time FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CBSA x Cal Q FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes: 1) Results of estimating linear regressions of employment growth on EWSR and controls. The dependent variable is measured over the period following when EWSR is measured. The variable $I(highmnf)$ is equal to 1 when the share of total city employment comprised by manufacturing jobs is greater than one-third in the previous year, and 0 otherwise. All EWSRs computed using log returns. An observation is a CBSA-period, and we limit the data to CBSA-periods with greater than 10,000 total employees. Data are from Compustat, BLS, and YTS from 1997 to 2017. 2) All variables are defined in Table A.1. Variables are winsorized at the 1% level in each tail. 3) $***p < 0.01$, $**p < 0.05$, and $*p < 0.1$. Heteroscedasticity robust standard errors are reported.

F. Public Firm Employment Growth as the Dependent Variable

The BLS QCEW data on employment by industry and city are not available for publicly traded firms separately from private firms. Hence, we use total employment as our primary dependent variable throughout our analysis. To investigate whether our results hold for publicly traded firm employment, we use the YTS data to measure public and private firm employment separately at an annual frequency by industry and city. We then regress annual changes in public and private firm employment on annual EWSR and controls. The regression results are reported in Table A.11. Annual EWSR is insignificant for both public firm (columns 1 and 3) and private firm (columns 2 and 4) annual employment growth, which likely reflects difficulty in predicting employment changes at annual frequencies.

Table A.11: Public vs private employment growth at an annual frequency

	One-year ahead NAICS4 employment growth		One-year ahead CBSA employment growth	
	Public firm	Private firm	Public firm	Private firm
	1	2	3	4
EWSR (Y)	-0.14	0.18	-0.025	-0.000079
	(0.21)	(0.15)	(0.025)	(0.0080)
L.EWSR (Y)	-0.42	-0.27	0.030	-0.0085
	(0.29)	(0.18)	(0.025)	(0.0079)
L2.EWSR (Y)	-0.20	-0.0087	-0.023	-0.00091
	(0.20)	(0.040)	(0.023)	(0.0077)
L.public emp gr (Y)	-0.20		-0.23***	
	(0.14)		(0.012)	
L2.public emp gr (Y)	-0.20		-0.15***	
	(0.17)		(0.011)	
L3.public emp gr (Y)	0.14		-0.11***	
	(0.29)		(0.0097)	
L.private emp gr (Y)		-1.03		-0.13***
		(0.71)		(0.011)
L2.private emp gr (Y)		-0.55		-0.12***
		(0.40)		(0.010)
L3.private emp gr (Y)		0.11		-0.087***
		(0.18)		(0.010)
Observations	13,868	13,868	4,829	4,877
R^2	0.201	0.256	0.210	0.256
Time FE	Y	Y	Y	Y
NAICS4 FE	Y	Y	N	N
CBSA FE	N	N	Y	Y

Notes: 1) Results of estimating linear regressions of publicly traded firm (columns 1 and 3) and private firm (columns 2 and 4) employment growth on EWSR and controls. The dependent variable is measured over the period following when EWSR is measured. All EWSRs are computed using log returns. An observation in columns 1 and 2 is a 4-digit NAICS industry-year, and an observation in columns 3 and 4 is a CBSA-year, and we limit the CBSA data to CBSA-periods with greater than 10,000 total employees. Data are from Compustat and YTS from 1997 to 2017. 2) All variables are defined in Table A.1. Right-hand-side variables are winsorized at the 1% level in each tail. 3) $***p < 0.01$, $**p < 0.05$, and $*p < 0.1$. Heteroscedasticity robust standard errors are reported.