For Online Publication

A Data Appendix

Variable	Source	Sample	Notes
Metropolitan Statistical Area	US Census 1980, 1990, 2000	All MSAs identified across all 3 censuses. Rural areas of each state are included as additional geographic units.	MSAs identified in some, but not all of the censuses are included in rural areas of each state.
Local High Skill and Low Skill Wages	US Census 1980, 1990, 2000	All individuals with no business or farm income ages 25-55 working at least 35 hours per week and 48 weeks per year and earn no business or farm income.	Local wages in each MSA are averages of workers for each skill level living in each city. High skill worker is defined as a worker with at least a 4 year college degree. All other workers are considered low skill.
Local Housing Rent	US Census 1980, 1990, 2000	All households where the head-of-household is between the ages of 25 and 55 and works at least 35 hours per week and 48 weeks per year and earn no business or farm income.	Rental rates are measured as the gross rent, which includes both the housing rent and the cost of utilities. Rents are imputed for households which own their home. Imputed rents are converted from housing values using a discount rate of 7.85 percent (Peiser and Smith 1985), to which electricity and gas utility costs are added.
Local College Employment Ratio	US Census 1980, 1990, 2000	All full-time employed workers between the ages of 25 and 55 without business or farm income.	College employment ratio is defined as the ratio of number of full-time employed workers in the city with a 4 year college degree to the number of full-time employed lower skill workers living in the city.
Worker's Race	US Census 1980, 1990, 2000	All households where the head-of-household is between the ages of 25 and 55 and works at least 35 hours per week and 48 weeks per year and earn no business or farm income.	A household is classified as black if the head of household reports his race as black.
Worker's Immigrant Status	US Census 1980, 1990, 2000	All households where the head-of-household is between the ages of 25 and 55 and works at least 35 hours per week and 48 weeks per year and earn no business or farm income.	A household is classified as an immigrant if the head-of-household was born outside of the United States.
Local Bartik Shocks	US Census 1980, 1990, 2000	To measure local share weights: All employed workers between the ages of 25 and 55. To measure national industry wages: All individuals ages 25-55 working at least 35 hours per week and 48 weeks per year with no business or farm income.	Industries are defined by the Census, which is very close to 3 digit SIC codes. When measuring the Bartik shock for a given city, the wages of that city's workers are dropped when calculating the nationwide shock.

Variable	Source	Sample	Notes
Workers' Mean Utility Level for Each City	US Census 1980, 1990, 2000	All households where the head-of-household is between the ages of 25 and 55 and works at least 35 hours per week and 48 weeks per year and earn no business or farm income. MSAs are dropped which have no blacks or immigrants with either the college or non-college sample.	Workers' preference estimates are estimated off a sample which only included head of households. Household members are assumed to move with the head-of-household.
Land Unavailability	Saiz (2010)	All MSAs covered in Saiz's sample	Measure the share of land within 50km of a city's center which cannot be developed due to geographic constraints.
Wharton Regulation Index	Gyourko, Saiz, Summers (2007)	All MSAs covered in Saiz's sample	Land use regulation index of municipalities based on the 2005 Wharton Land Use Regulation Survey. Saiz (2010) aggregates the municipal indices to an MSA level index.
Apparel Stores, Eating and Drinking Places, and Movie Theaters per 1000 Residents	County Business Patterns 1980, 1990 2000	All non-rural MSAs.	Counties aggregated to MSAs based on 1999 MSA definitions.
Property Crimes and Violent Crimes per 1000 Residents	FBI Uniform Crime Reports 1980, 1990, 2000	All non-rural MSAs which the FBI data covers.	
EPA Air Quality Index	Environmental Protection Agency	All non-rural MSAs which the EPA reports data on.	
Busses per capita	Duranton & Turner (2011)	All MSAs covered in Duranton & Turner's sample.	Data measures number of large busses in each MSA at peak service per capita. Data are from 1984, 1994, and 2004.
Public Transit Index	Duranton & Turner (2011)	All MSAs covered in Duranton & Turner's sample.	Count of number of large busses and rail cars in each MSA at peak service per capita divided by population. Data are from 1984, 1994, and 2004.
Average Annual Daily Traffic-Interstates	Duranton & Turner (2011)	All MSAs covered in Duranton & Turner's sample.	Average number of vehicles on interstate roads per lane per day. Data are from 1983, 1993, and 2003.

Variable	Source	Sample	Notes
Average Annual Daily Traffic-Major Urban Roads	Duranton & Turner (2011)	All MSAs covered in Duranton & Turner's sample.	Average number of vehicles on major urban roads per lane per day. Major urban road is defined as roads which are "collectors", "minor arterial", "principal arterial", or "other highways" by the Department of Transportation. Data are from 1983, 1993, and 2003.
Government Spending on Parks and Recreation per capita.	Census of Governments County-area file.	All non-rural MSAs.	Per capita government spending by all branches of local government within the MSA on parks and recreation. Data are from 1982, 1992, and 2002.
Government Spending on K-12 Education	Census of Governments County-area file.	All non-rural MSAs.	Total government spending on K-12 education by all branches of local government with the MSA. Data are from 1982, 1992, and 2002.
Pupils Enrolled in Public K-12 Education	National Center of Education Statistics Common Core of Data	All non-rural MSAs.	Total pupils enrolled in K-12 public schools. Data are from 1982, 1992, and 2002.
Number of employed Teachers in Public K-12 Education	Census of Governments County-area file.	All non-rural MSAs.	Total Full-time Equivalents of Teachers Employed in K-12 education within all branches of local government within the MSA. Data are from 1982, 1992, and 2002.
Patents Per Capita	NBER Patent Database	All non-rural MSAs.	The addresses from the inventor file were geocoded to MSAs based on their reported city, state, and zip code. The data are from year 1980, 1990, and 1999.
Employment Rate	US Census 1980, 1990, 2000	All individuals between ages 25 and 55.	Defined as the share of the 25-55 population employed. Includes those out of the labor force.

B Estimation Appendix

B.1 Local Expenditure Share Analysis

Microdata from the 2000 Consumer Expenditure Survey report households' annual expenditures. These are broken down into a number of categories including housing. I remove expenditures on savings and contributions to retirement plans, since these are measuring future consumption on both housing and non-housing goods. I include 25 to 55 year old household heads with positive labor income, to match the sample analyzed within my model. Table A.2 reports summary statistics of households' expenditure shares on housing. Non-college households spend an average of 39% of expenditure on housing, with a standard deviation of 16%. College workers spend an average of 44% on housing, with a standard deviation of 16%. To assess whether these housing expenditure shares are due to college and non-college workers facing difference average housing prices, I regress these housing expenditure shares on a dummy for college graduate, and control population size of the cities these households live in.[1] Panel B of Table A.2 shows that with these controls college graduates spend an average of 46% on housing and non college spend 43%.

While a number of older studies have found that housing is a normal good with an income elasticity of less than one (Polinsky and Ellwood (1979)), recent work has found that not to be the case across most parts of the income distribution (Lewbel and Pendakur (2009)). Lewbel and Pendakur (2009) finds expenditure shares on housing have a non-monotonic relationship with income, where expenditures shares are increasing at the very low end of the income distribution, and then decreasing at higher levels of income. Averaging these expenditure shares within college and non-college workers would lead to very similar levels of housing expenditure shares across the two groups.

B.2 Welfare Calculation

A worker $i's$ expected utility in 1980 is measured by the expected utility he would receive from living in his first choice city:

$$\begin{aligned} E\left(U_{i1980}\right) &= E\left(\max_j V_{ij1980}\right) \\ V_{ij1980} &= \boldsymbol{\beta}^w \mathbf{z}_i w_{j1980}^{edu} - \boldsymbol{\beta}^r \mathbf{z}_i r_{j1980} + \xi_{j1980}^z + \boldsymbol{\beta}^a \mathbf{z}_i \left(\gamma^a \ln\left(\frac{H_{j1980}}{L_{j1980}}\right) + \varepsilon_{j1980}^a\right) + \boldsymbol{\beta}^{st} \mathbf{z}_i \mathbf{st}_i \mathbf{x}_j^{st} + \boldsymbol{\beta}^{\text{div}} \mathbf{z}_i \,\text{div}_i\, \mathbf{x}_j^{\text{div}} + \varepsilon_{ij1980}. \end{aligned}$$

Since I do not observe each worker's idiosyncratic taste for each city, I must integrate out over the error distribution to calculate his expected utility from the city he chooses to live in. Since the error terms are distributed Type I extreme value, a worker's expected utility from his top choice city is:

$$E\left(U_{i1980}\right) = \ln\left(\sum_j \exp\left(\boldsymbol{\beta}^w \mathbf{z}_i w_{j1980}^{edu} - \boldsymbol{\beta}^r \mathbf{z}_i r_{j1980} + \xi_{j1980}^z + \boldsymbol{\beta}^a \mathbf{z}_i \left(\gamma^a \ln\left(\frac{H_{j1980}}{L_{j1980}}\right) + \varepsilon_{j1980}^a\right) + \boldsymbol{\beta}^{st} \mathbf{z}_i \mathbf{st}_i \mathbf{x}_j^{st} + \boldsymbol{\beta}^{\text{div}} \mathbf{z}_i \,\text{div}_i\, \mathbf{x}_j^{\text{div}}\right)\right).$$

Similarly, worker i's expected utility if wages adjust to the levels observed in 2000, $E\left(\hat{U}_{i2000}^w\right)$, is measured by:

$$E\left(\hat{U}_{i2000}^w\right) = \ln\left(\sum_j \exp\left(\boldsymbol{\beta}^w \mathbf{z}_i w_{j2000}^{edu} - \boldsymbol{\beta}^r \mathbf{z}_i r_{j1980} + \xi_{j1980}^z + \boldsymbol{\beta}^a \mathbf{z}_i \left(\gamma^a \ln\left(\frac{H_{j1980}}{L_{j1980}}\right) + \varepsilon_{j1980}^a\right) + \boldsymbol{\beta}^{st} \mathbf{z}_i \mathbf{st}_i \mathbf{x}_j^{st} + \boldsymbol{\beta}^{\text{div}} \mathbf{z}_i \,\text{div}_i\, \mathbf{x}_j^{\text{div}}\right)\right).$$

$E\left(\hat{U}_{i2000}^w\right)$ measures the utility worker i receives from living in the city he finds most desirable. Combining these, the expected utility impact due to cities' wage changes from 1980 to 2000 is:

$$\frac{E\left(\hat{U}_{i2000}^w\right) - E\left(\hat{U}_{i1980}^w\right)}{\boldsymbol{\beta}^w \mathbf{z}_i}.$$

The change in utility is divided by worker i's marginal utility of wages, so that utility is measured in log wage units.

[1] Due to confidentiality reasons, the CEX does not report households' MSA of residence. Instead they report whether the household lives in a city with more than 4 million people, 1.2-4 million, .33-1.2 million, 125-329 thounsand, or less than 125 thousand. I include these dummy variables as controls in the regrssion.

The expected utility of worker i if wages and rent adjust to the level observed in 2000 $E\left(\hat{U}^{wr}_{i2000}\right)$ is:

$$E\left(\hat{U}^{wr}_{i2000}\right) = \ln\left(\sum_j \exp\left(\boldsymbol{\beta}^w \mathbf{z}_i w^{edu}_{j2000} - \boldsymbol{\beta}^r \mathbf{z}_i r_{j2000} + \xi^z_{j1980} + \boldsymbol{\beta}^a \mathbf{z}_i \left(\gamma^a \ln\left(\frac{H_{j1980}}{L_{j1980}}\right) + \varepsilon^a_{j1980}\right) + \boldsymbol{\beta}^{st} \mathbf{z}_i \mathbf{st}_i \mathbf{x}^{st}_j + \boldsymbol{\beta}^{\text{div}} \mathbf{z}_i \,\text{div}_i\, \mathbf{x}^{\text{div}}_j\right)\right).$$

The expected utility of worker i if wages, rents, and endogenous amenities due to resorting adjust to the level observed in 2000 $E\left(\hat{U}^{wr}_{i2000}\right)$, is measured by:

$$\begin{aligned} E\left(\hat{U}^{wr}_{i2000}\right) &= \ln\left(\sum_j \exp\left(\begin{array}{c} \boldsymbol{\beta}^w \mathbf{z}_i w^{edu}_{j2000} - \boldsymbol{\beta}^r \mathbf{z}_i r_{j2000} + \xi^z_{j1980} + \boldsymbol{\beta}^a \mathbf{z}_i \left(\gamma^a \ln\left(\frac{\hat{H}_{j2000}}{\hat{L}_{j2000}}\right) + \varepsilon^a_{j1980}\right) \\ + \boldsymbol{\beta}^{st} \mathbf{z}_i \mathbf{st}_i \mathbf{x}^{st}_j + \boldsymbol{\beta}^{\text{div}} \mathbf{z}_i \,\text{div}_i\, \mathbf{x}^{\text{div}}_j \end{array}\right)\right) \\ \hat{H}_{j2000} &= \frac{H_{j2000}}{H_{2000}} H_{1980}, \hat{L}_{j2000} = \frac{L_{j2000}}{L_{2000}} L_{1980}. \end{aligned}$$

$\hat{H}_{j2000}$ measures the share of all high skill workers living in city j in year 2000, scaled by the national population size of high skill workers in 1980:H_{1980}. $\hat{L}_{j2000}$ is similarly defined, for low skill workers.

B.3 Robustness Checks

I first assess the sensitivity to whether I hedonically adjust local wage and rent changes. Wages are adjusted for a more fine measure of education, a quadratic in experience, gender, and race. I adjust rents by number of rooms, number of bedrooms, and age of structure. Column 1 of Table A.3 reports these parameter estimates. The model estimates using these wage and rent measures are qualitatively the same. The magnitude of elasticity of labor demand for non-college workers with respect to non-college wages falls somewhat, but the sign does not change.

As additional robustness tests, I assess whether the local housing prices face by college workers appear to respond differently than the local housing prices faced by non-college workers living within the same city. Columns 2 and 3 of Table A.3 show that parameter estimates are quite similar regardless of whether local housing prices are measured only using housing prices from the non-college population or the college population.

I test whether the estimates are robust to changes in the calibrated local expenditure parameters. Columns 4 and 6 of Table A.3 show that the parameter estimates are quite similar when using a local expenditure share of 0.58 or 0.67.

Next, I consider whether the college employment ratio itself could be used as the index for endogenous amenities. The model in the main text assumes that workers enjoys better amenities in high college share cities through the indirect effects of the college share on the bundle of observed amenities. Using the college share itself as the endogenous amenity index combines the value of these observable amenities with the possibility that workers by get direct utility for more educated neighbors, not just indirectly through betters schools and lower crime. The estimates of this model are in Column 6 of Table A.3. The estimates are similar, however the elasticity of demand for the endogenous amenity has increased somewhat. These estimates suggest that the amenity value of highly educated neighbors may include a direct preference for neighbors' education, not just an indirect preference through other amenities.

Finally, Columns 7 of Table A.3 estimates the model where amenities are allowed to be endogenous, but the labor demand model imposes the CES structure, ruling out endogenous productivity effects. As suspected, the estimates for workers' preferences for cities look very similar to the full model estimates. The labor demand estimates look similar to the standard model's labor demand elasticity estimates. Column 8 of Table A.3 flips these around, allowing for endogenous productivity effects, but assuming amenities are exogenous. Consistent withe standard model estimates, these estimates suggest college workers desire lower real wages. The labor demand estimates are similar to the full model estimates, however the elasticity of college labor demand with respect to college labor is very close to zero now. Overall, the model estimates are robust to a number of different specifications.

Table A.1: Summary Statistics of Household Head City Choice Samples

	A. 1980									
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
	Non-College Sample					College Sample				
Black	1107042	0.113	0.317	0	1	352447	0.047	0.212	0	1
Immigrant	1107042	0.071	0.257	0	1	352447	0.079	0.269	0	1
Live in State of Birth	1028380	0.645	0.478	0	1	324709	0.480	0.500	0	1
	B. 1990									
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
	Non-College Sample					College Sample				
Black	1264283	0.102	0.303	0	1	476737	0.053	0.224	0	1
Immigrant	1264283	0.086	0.280	0	1	476737	0.097	0.296	0	1
Live in State of Birth	1155798	0.660	0.474	0	1	430641	0.477	0.499	0	1
	C.2000									
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
	Non-College Sample					College Sample				
Black	1457637	0.117	0.321	0	1	628372	0.066	0.248	0	1
Immigrant	1457637	0.123	0.328	0	1	628372	0.133	0.340	0	1
Live in State of Birth	1278937	0.670	0.470	0	1	544824	0.497	0.500	0	1

Notes: Sample is all heads of household between ages 25 and 55 working at least 35 hours per week and 48 weeks per year. This sample is used to estimate workers' preferences for cities. Summary statistics for whether a worker lives in his state of birth is restricted to non-immigrant workers. College is defined as having a 4 year college degree.

Table A.2: Housing Expenditure Shares: 2000 Consumer Expenditure Survey

A. Summary Statistics

	Obs	Mean	Std. Dev.	Min	Max
Non-College Households	2904	0.3911	0.1596	0	1
College Households	1355	0.4347	0.1556	0	0.951

B. Housing Expenditure Shares, Controlling for City Population

Non-College Households	0.4275***
	[0.005]
College Households	0.4615***
	[0.0055]

Notes: Data from 2000 Consumer Expenditure Survey mirco data. Housing expenditure share is measured by total spending on housing divided by total expenditure, net of savings and retirement contributions. Sample is 25-55 year old household heads with positive earnings.

Table A.3: Robustness Tests of Alternative Model Specifications

	Hedonic Adjusted Wage & Rent	Rents from College Workers	Rents from Non-College Workers	Local Expend. Share =.58	Local Expend. Share =.67	College Share Endog. Amenity	CES Labor Demand	Exog. Amenities
Household Preferences for Cities								
College Workers:								
Wage	1.029	1.907	4.058	2.592	1.666	3.358	1.326	-1.724
	[0.873]	[0.947]	[2.214]	[1.347]	[0.956]	[1.841]	[1.432]	[0.705]
Rent	-0.638	-1.183	-2.516	-1.607	-1.116	-2.082	-0.822	1.069
	[0.541]	[0.587]	[1.372]	[0.835]	[0.641]	[1.141]	[0.888]	[0.437]
Endogenous Amenity	0.915	0.880	1.108	1.002	1.016	4.209	0.974	-
	[0.162]	[0.12]	[0.186]	[0.116]	[0.117]	[1.768]	[0.18]	
Differential Effects: Blacks								
Wage	3.823	4.203	7.625	5.990	4.748	7.044	-0.128	1.863
	[1.375]	[1.771]	[3.875]	[2.335]	[1.722]	[2.564]	[0.37]	[1.359]
Rent	-2.371	-2.606	-4.727	-3.714	-3.181	-4.367	0.080	-1.155
	[0.852]	[1.098]	[2.402]	[1.448]	[1.153]	[1.59]	[0.229]	[0.842]
Endogenous Amenity	0.854	0.812	1.143	0.989	1.154	3.207	0.761	-
	[0.258]	[0.254]	[0.376]	[0.275]	[0.269]	[2.075]	[0.229]	
Differential Effects: Immigrants								
Wage	-1.636	1.383	3.577	2.170	-0.045	1.999	1.160	-3.162
	[1.329]	[2.045]	[3.562]	[2.419]	[1.847]	[3.66]	[0.329]	[1.446]
Rent	1.014	-0.857	-2.218	-1.346	0.030	-1.239	-0.719	1.960
	[0.824]	[1.268]	[2.209]	[1.5]	[1.145]	[2.269]	[0.204]	[0.896]
Endogenous Amenity	0.744	0.970	1.218	1.049	0.900	3.341	1.278	-
	[0.237]	[0.229]	[0.336]	[0.238]	[0.245]	[2.932]	[0.352]	
Non-College Workers:								
Wage	5.520	3.439	3.693	4.083	3.895	4.538	3.751	4.126
	[0.76]	[0.646]	[0.797]	[0.809]	[0.645]	[0.826]	[0.579]	[0.564]
Rent	-3.422	-2.132	-2.290	-2.532	-2.610	-2.813	-2.326	-2.558
	[0.471]	[0.4]	[0.494]	[0.502]	[0.432]	[0.512]	[0.359]	[0.35]
Endogenous Amenity	0.516	0.046	0.160	0.186	0.377	1.536	0.107	-
	[0.198]	[0.163]	[0.145]	[0.158]	[0.141]	[0.754]	[0.137]	
Differential Effects: Blacks								
Wage	-0.973	2.316	2.933	2.529	0.938	3.275	0.040	-0.117
	[1.167]	[1.981]	[3.174]	[2.482]	[1.779]	[2.486]	[0.247]	[0.932]
Rent	0.603	-1.436	-1.819	-1.568	-0.628	-2.031	-0.025	0.073
	[0.724]	[1.228]	[1.968]	[1.539]	[1.192]	[1.542]	[0.153]	[0.578]
Endogenous Amenity	0.383	0.728	0.820	0.757	0.711	3.013	0.172	-
	[0.205]	[0.215]	[0.276]	[0.22]	[0.225]	[1.639]	[2.266]	
Differential Effects: Immigrants								
Wage	-1.917	0.672	2.717	1.519	-0.638	2.713	-0.150	-4.570
	[1.861]	[2.752]	[4.871]	[3.532]	[2.55]	[4.199]	[3.107]	[1.168]
Rent	1.188	-0.417	-1.684	-0.942	0.428	-1.682	0.093	2.833
	[1.154]	[1.706]	[3.02]	[2.19]	[1.709]	[2.603]	[1.927]	[0.724]
Endogenous Amenity	0.865	1.155	1.355	1.154	0.978	5.441	1.278	-
	[0.303]	[0.282]	[0.372]	[0.298]	[0.306]	[3.372]	[0.352]	
Housing Supply								
Land Use Regulation	0.080	0.087	0.089	0.093	0.088	0.103	0.076	0.078
	[0.015]	[0.019]	[0.021]	[0.02]	[0.019]	[0.021]	[0.017]	[0.016]
Land Unavailability	0.051	0.022	0.018	0.020	0.023	0.016	0.014	0.024
	[0.012]	[0.011]	[0.01]	[0.01]	[0.01]	[0.012]	[0.01]	[0.008]
Base House Supply Elasticity	0.019	-0.086	-0.066	0.013	0.016	-0.020	0.031	-0.012
	[0.089]	[0.079]	[0.096]	[0.091]	[0.087]	[0.088]	[0.084]	[0.076]
Labor Demand								
Rho							0.367	
							[0.13]	
Elast. of Col Wage wrt Col Emp	0.112	0.233	0.370	0.245	0.211	0.143		-0.094
	[0.357]	[0.274]	[0.283]	[0.322]	[0.294]	[0.377]		[0.216]
Elast. of Col Wage wrt Non-Col Emp	0.418	0.296	-0.002	0.294	0.331	0.402		0.603
	[0.382]	[0.335]	[0.322]	[0.388]	[0.348]	[0.453]		[0.262]
Elast of Non-Col Wage wrt Col Emp	0.437	0.762	0.689	0.700	0.696	0.749		0.910
	[0.193]	[0.162]	[0.225]	[0.166]	[0.165]	[0.195]		[0.181]
Elast of Non-Col Wage wrt Non-Col Emp	-0.050	-0.650	-0.609	-0.569	-0.535	-0.618		-0.732
	[0.224]	[0.201]	[0.254]	[0.205]	[0.204]	[0.231]		[0.227]
Amenity Supply								
College Employment Ratio	2.496	2.807	2.412	2.610	2.601	-	3.017	-
	[0.902]	[1.183]	[2.483]	[1.124]	[1.121]		[1.116]	

Notes: Standard errors in brackets. Standard errors clustered by MSA. See text for details on all the alternative model specifications.

Table A.4 Additional Robustness Tests of Alternative Model Specifications

	2SLS	Partial F (from 2SLS)	LIML
Household Preferences for Cities			
College Workers:			
Wage	2.357**	5.620	6.347*
	[0.974]		[3.254]
Endogenous Amenity	0.197**	2.390	0.646*
	[0.0997]		[0.354]
Differential Effects: Blacks			
Wage	3.399***	5.620	6.272**
	[1.088]		[2.628]
Endogenous Amenity	0.0168	2.390	0.333
	[0.111]		[0.285]
Differential Effects: Immigrants			
Wage	0.553	5.620	5.175
	[1.269]		[4.084]
Endogenous Amenity	0.275**	2.390	0.827*
	[0.130]		[0.445]
Non-College Workers:			
Wage	5.664***	23.070	7.815***
	[0.686]		[1.375]
Endogenous Amenity	0.129*	5.760	0.451**
	[0.0751]		[0.196]
Differential Effects: Blacks			
Wage	0.756	23.070	1.105
	[0.646]		[0.862]
Endogenous Amenity	-0.102	5.760	0.00290
	[0.0707]		[0.115]
Differential Effects: Immigrants			
Wage	-2.063**	23.070	-0.608
	[0.922]		[1.668]
Endogenous Amenity	0.0681	5.760	0.428*
	[0.101]		[0.236]
Housing Supply			
Land Use Regulation	0.114***	78.300	0.150***
	[0.0177]		[0.0255]
Land Unavailability	0.0219*	15.020	0.0171
	[0.0131]		[0.0162]
Base House Supply Elasticity	-0.587***	35.870	-0.806***
	[0.101]		[0.297]
Labor Demand			
Elasticity of College Wage wrt College Labor	0.812***	3.660	0.753
	[0.239]		[0.658]
College Wage wrt Non-College Labor	-1.265*	0.310	-2.504
	[0.752]		[3.394]
Non-College Wages wrt College Labor	0.850***	3.660	0.838***
	[0.213]		[0.305]
Non-College Wage wrt Non-College Labor	-1.194*	0.310	-1.494
	[0.669]		[1.173]
Amenity Supply			
College Employment Ratio	4.730***	6.030	10.41***
	[1.416]		[3.444]

Notes: Standard errors in brackets. See text for details on all the alternative model specifications.

Table A.5: Largest and Smallest Amenity Changes across 75 Largest Cities

Largest Increases in College Amenities	
msa	Δ Amenity
Raleigh-Durham, NC	0.318
Las Vegas, NV	0.288
Charlotte-Gastonia-Rock Hill, NC-SC	0.283
Providence-Fall River-Pawtucket, MA/RI	0.232
Boston, MA-NH	0.214
Orlando, FL	0.205
Tacoma, WA	0.187
Scranton-Wilkes-Barre, PA	0.184
Atlanta, GA	0.159
West Palm Beach-Boca Raton-Delray Beach, FL	0.148

Largest Increases in Non-College Amenities	
msa	Δ Amenity
Raleigh-Durham, NC	0.120
Scranton-Wilkes-Barre, PA	0.067
Boston, MA-NH	0.063
Rochester, NY	0.058
Harrisburg-Lebanon--Carlisle, PA	0.034
Allentown-Bethlehem-Easton, PA/NJ	0.018
Syracuse, NY	0.011
Atlanta, GA	0.010
Pittsburgh, PA	0.009
Charlotte-Gastonia-Rock Hill, NC-SC	0.007

Largest Decreases in College Amenities	
msa	Δ Amenity
Tulsa, OK	-0.347
Baton Rouge, LA	-0.317
Fresno, CA	-0.307
Los Angeles-Long Beach, CA	-0.305
San Jose, CA	-0.279
Oklahoma City, OK	-0.278
Houston-Brazoria, TX	-0.274
Hartford-Bristol-Middleton- New Britain, CT	-0.226
New Orleans, LA	-0.208
Milwaukee, WI	-0.202

Largest Decreases in Non-College Amenities	
msa	Δ Amenity
Los Angeles-Long Beach, CA	-0.357
Ventura-Oxnard-Simi Valley, CA	-0.322
San Jose, CA	-0.321
San Diego, CA	-0.317
San Francisco-Oakland-Vallejo, CA	-0.302
Fresno, CA	-0.299
Sacramento, CA	-0.253
Honolulu, HI	-0.225
Miami-Hialeah, FL	-0.209
Fort Lauderdale-Hollywood-Pompano Beach, FL	-0.208

Best Amenities for College Workers, 1980	
msa	Amenity
Los Angeles-Long Beach, CA	2.071
San Francisco-Oakland-Vallejo, CA	1.853
Washington, DC/MD/VA	1.761
Denver-Boulder, CO	1.666
Seattle-Everett, WA	1.569
New York-Northeastern NJ	1.529
Chicago, IL	1.500
Dallas-Fort Worth, TX	1.500
Phoenix, AZ	1.465
Minneapolis-St. Paul, MN	1.456

Best Amenities for Non-College Workers, 1980	
msa	Amenity
Los Angeles-Long Beach, CA	1.262
San Francisco-Oakland-Vallejo, CA	0.981
San Diego, CA	0.932
Phoenix, AZ	0.883
Denver-Boulder, CO	0.843
Honolulu, HI	0.828
San Jose, CA	0.822
Tampa-St. Petersburg-Clearwater, FL	0.814
New York-Northeastern NJ	0.762
Seattle-Everett, WA	0.749

Worst Amenities for College Workers, 1980	
msa	Amenity
Scranton-Wilkes-Barre, PA	0.000
Youngstown-Warren, OH-PA	0.063
Syracuse, NY	0.076
Allentown-Bethlehem-Easton, PA/NJ	0.086
Toledo, OH/MI	0.157
Harrisburg-Lebanon--Carlisle, PA	0.170
Rochester, NY	0.292
Albany-Schenectady-Troy, NY	0.310
Buffalo-Niagara Falls, NY	0.379
Akron, OH	0.416

Worst Amenities for Non-College Workers, 1980	
msa	Amenity
Syracuse, NY	0.000
Rochester, NY	0.007
Allentown-Bethlehem-Easton, PA/NJ	0.021
Harrisburg-Lebanon--Carlisle, PA	0.031
Toledo, OH/MI	0.039
Youngstown-Warren, OH-PA	0.045
Scranton-Wilkes-Barre, PA	0.049
Albany-Schenectady-Troy, NY	0.126
Buffalo-Niagara Falls, NY	0.140
Grand Rapids, MI	0.154

Best Amenities for College Workers, 2000	
msa	Amenity
Los Angeles-Long Beach, CA	1.767
Washington, DC/MD/VA	1.710
San Francisco-Oakland-Vallejo, CA	1.653
Seattle-Everett, WA	1.652
Denver-Boulder, CO	1.650
Boston, MA-NH	1.646
Atlanta, GA	1.609
Phoenix, AZ	1.562
New York-Northeastern NJ	1.491
Chicago, IL	1.445

Best Amenities for Non-College Workers, 2000	
msa	Amenity
Los Angeles-Long Beach, CA	0.905
Phoenix, AZ	0.850
Denver-Boulder, CO	0.749
Tampa-St. Petersburg-Clearwater, FL	0.729
Seattle-Everett, WA	0.719
Las Vegas, NV	0.713
Atlanta, GA	0.708
Boston, MA-NH	0.706
San Francisco-Oakland-Vallejo, CA	0.679
Orlando, FL	0.661

Worst Amenities for College Workers, 2000	
msa	Amenity
Youngstown-Warren, OH-PA	0.000
Allentown-Bethlehem-Easton, PA/NJ	0.076
Syracuse, NY	0.134
Harrisburg-Lebanon--Carlisle, PA	0.155
Scranton-Wilkes-Barre, PA	0.184
Toledo, OH/MI	0.207
Akron, OH	0.308
Buffalo-Niagara Falls, NY	0.309
Albany-Schenectady-Troy, NY	0.323
Fresno, CA	0.362

Worst Amenities for Non-College Workers, 2000	
msa	Amenity
Youngstown-Warren, OH-PA	0.000
Toledo, OH/MI	0.002
Syracuse, NY	0.011
Buffalo-Niagara Falls, NY	0.037
Allentown-Bethlehem-Easton, PA/NJ	0.039
Albany-Schenectady-Troy, NY	0.049
Rochester, NY	0.065
Harrisburg-Lebanon--Carlisle, PA	0.066
Grand Rapids, MI	0.091
Akron, OH	0.103

Notes: Sample reports top and bottom 10 from the 75 biggest cities by 1980 population. Local amenities are inferred from model estimates. Local high and low skill amenities are normalized to 0 in city least with the least desirable amenities in 1980 and 2000. Units measure the log wage value equilvalent to the utility difference between the amenities in the given city and the city normalized to 0. See text for further details.

Table A.6: Largest and Smallest Productivity Changes across 75 Largest Cities

Largest Increases in College Productivity	
msa	Δ Productivity
San Jose, CA	0.237
Milwaukee, WI	0.236
Tulsa, OK	0.213
San Francisco-Oakland-Vallejo, CA	0.202
New York-Northeastern NJ	0.170
Hartford-Bristol-Middleton- New Britain, CT	0.168
Oklahoma City, OK	0.163
Philadelphia, PA/NJ	0.160
Chicago, IL	0.153
Birmingham, AL	0.131

Largest Increases in Non-College Productivity	
msa	Δ Productivity
Fresno, CA	-0.014
Baton Rouge, LA	-0.058
Austin, TX	-0.060
Greensboro-Winston Salem-High Point, NC	-0.090
Salt Lake City-Ogden, UT	-0.094
New Orleans, LA	-0.103
Honolulu, HI	-0.112
Hartford-Bristol-Middleton- New Britain, CT	-0.114
Sacramento, CA	-0.116
Riverside-San Bernardino,CA	-0.117

Largest Decreases in College Productivity	
msa	Δ Productivity
Las Vegas, NV	-0.475
Riverside-San Bernardino,CA	-0.347
Orlando, FL	-0.345
Raleigh-Durham, NC	-0.275
West Palm Beach-Boca Raton-Delray Beach, FL	-0.274
Rochester, NY	-0.259
Syracuse, NY	-0.222
Phoenix, AZ	-0.214
Tacoma, WA	-0.206
Jacksonville, FL	-0.205

Largest Decreases in Non-College Productivity	
msa	Δ Productivity
Pittsburgh, PA	-0.396
Louisville, KY/IN	-0.387
Youngstown-Warren, OH-PA	-0.379
Fort Lauderdale-Hollywood-Pompano Beach, FL	-0.338
Indianapolis, IN	-0.335
Scranton-Wilkes-Barre, PA	-0.333
Orlando, FL	-0.315
Boston, MA-NH	-0.314
Allentown-Bethlehem-Easton, PA/NJ	-0.304
Seattle-Everett, WA	-0.303

Largest Decrease in College-Non College Productivity Gap	
msa	Δ Productivity
Riverside-San Bernardino,CA	-0.230
Las Vegas, NV	-0.216
Fresno, CA	-0.119
Greensboro-Winston Salem-High Point, NC	-0.105
Rochester, NY	-0.065
Tacoma, WA	-0.055
Syracuse, NY	-0.050
Orlando, FL	-0.030
Austin, TX	-0.030
Raleigh-Durham, NC	-0.026

Largest Increase in College-Non College Productivity Gap	
msa	Δ Productivity
Milwaukee, WI	0.521
San Jose, CA	0.509
Chicago, IL	0.439
Tulsa, OK	0.411
Birmingham, AL	0.403
Pittsburgh, PA	0.394
Boston, MA-NH	0.389
San Francisco-Oakland-Vallejo, CA	0.388
Buffalo-Niagara Falls, NY	0.384
Detroit, MI	0.380

Notes: Sample reports top and bottom 10 from the 75 biggest cities by 1980 population. Local productivity is inferred from model estimates. Local high and low skill productivities are normalized to 0 in city least productive in 1980. Unit measure difference in log wages between cities directly due to productivity differences. See text for further details.