

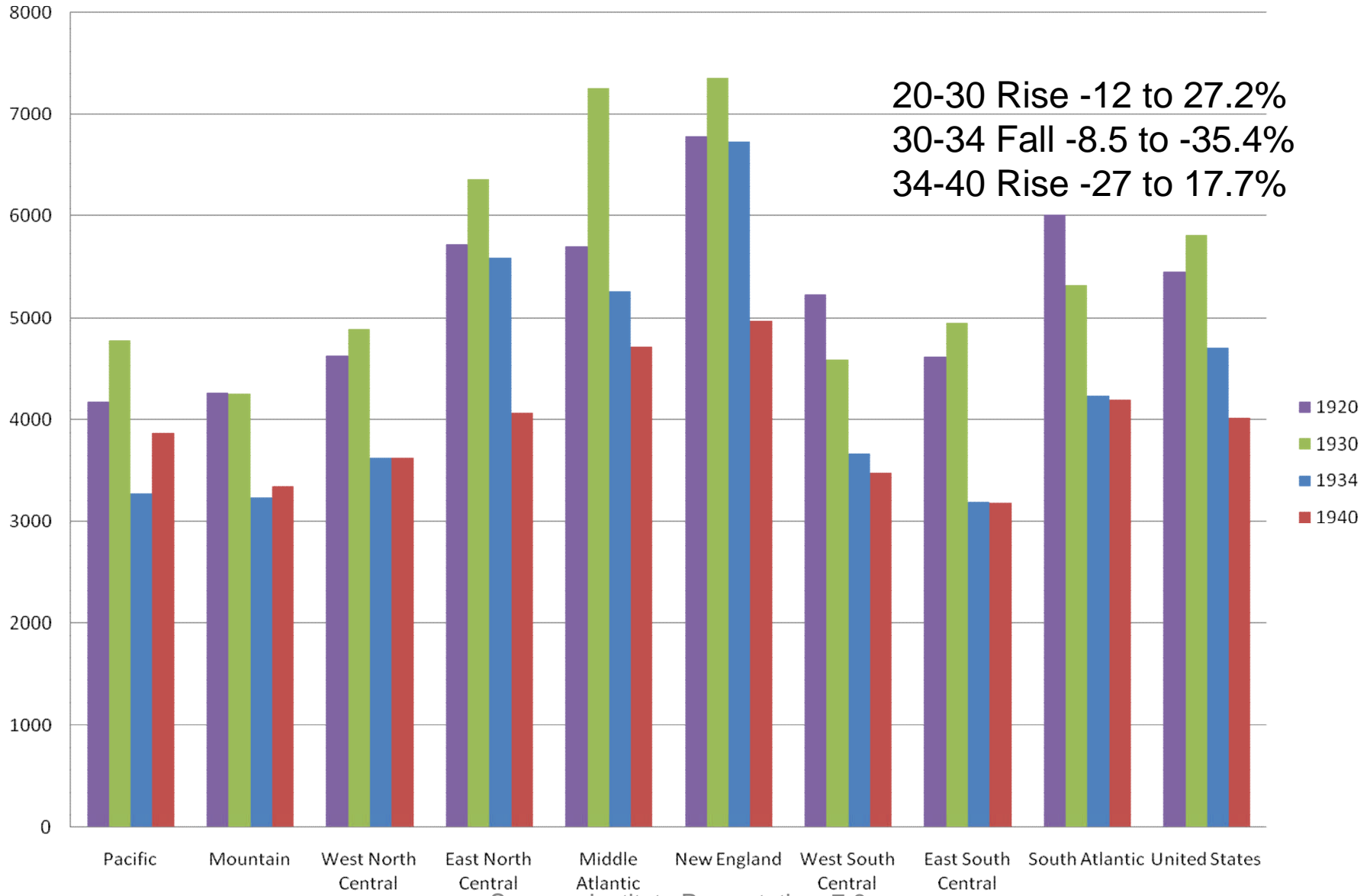
# The Housing Roller Coaster

A Preliminary Exploration of  
Fluctuations in Urban Housing  
Markets in the 1920s and 1930s

Trevor Kollmann, Jaret Treber, Price Fishback, and Shawn Kantor

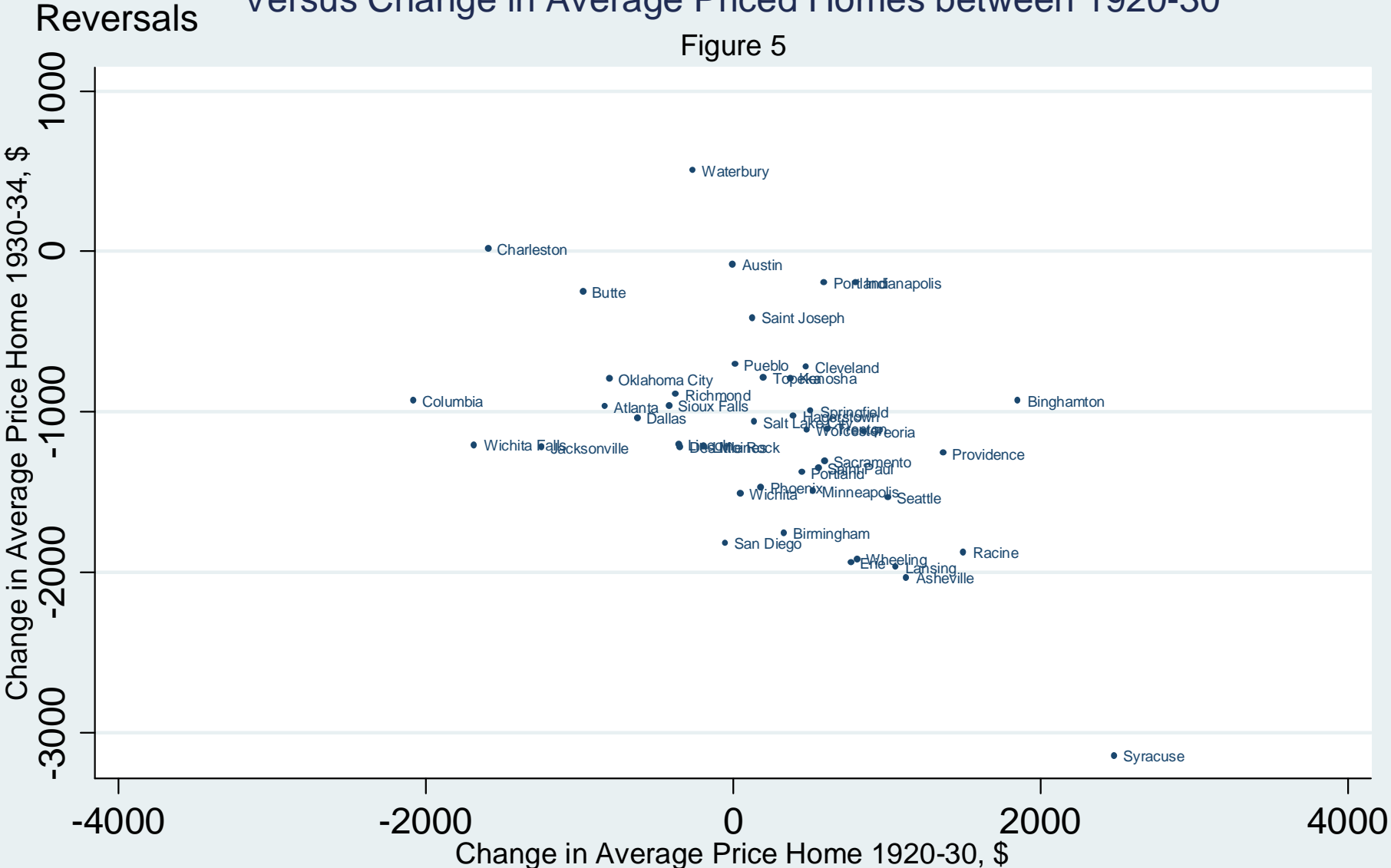
Average Home Values in the United States by U.S. Census Region (45 Cities)

Figure 3



# Change in Average Priced Home between 1930-34 Versus Change in Average Priced Homes between 1920-30

Figure 5



Note: Contains Data on 44 Cities

Summary Statistics CWA Sample Table 1

Variable	Obs	Mean	SE	Min	Max
Change in the Average Values of Homes between 1930 - 34	44	-1143	654	-3142	505
Average Value of Mortgaged Homes in 1920	44	5104	1153	2522	7788
Change in the Average Values of Homes between 1920 - 30	44	245	897	-2079	2480
Manufacturing Earnings per Employee, 1929	44	1282	187	823	1690
Growth Rate of Manufacturing Earnings Per Mfg Employee, 1929-33	44	-0.38	0.11	-0.70	-0.21
Growth Rate of Average Number of Mfg Earners, 1929-33	44	-0.37	0.20	-0.80	0.23
Percent FDIC Banks Suspended from 1930-32, Base Year = 1929	44	24.96	15.06	0.00	62.50
Per Capita Tax Returns, 1929	44	0.04	0.01	0.01	0.07
Change in Tax Returns, 1933 - 1929	44	0.00	0.01	-0.04	0.01
Unemployment as Percent of Population, 1930	44	2.29	0.88	0.79	4.60
Layoffs as Percent of Population, 1930	44	0.67	0.45	0.17	2.42
Percent Illiterate, 1930	44	3.15	3.08	0.31	16.97

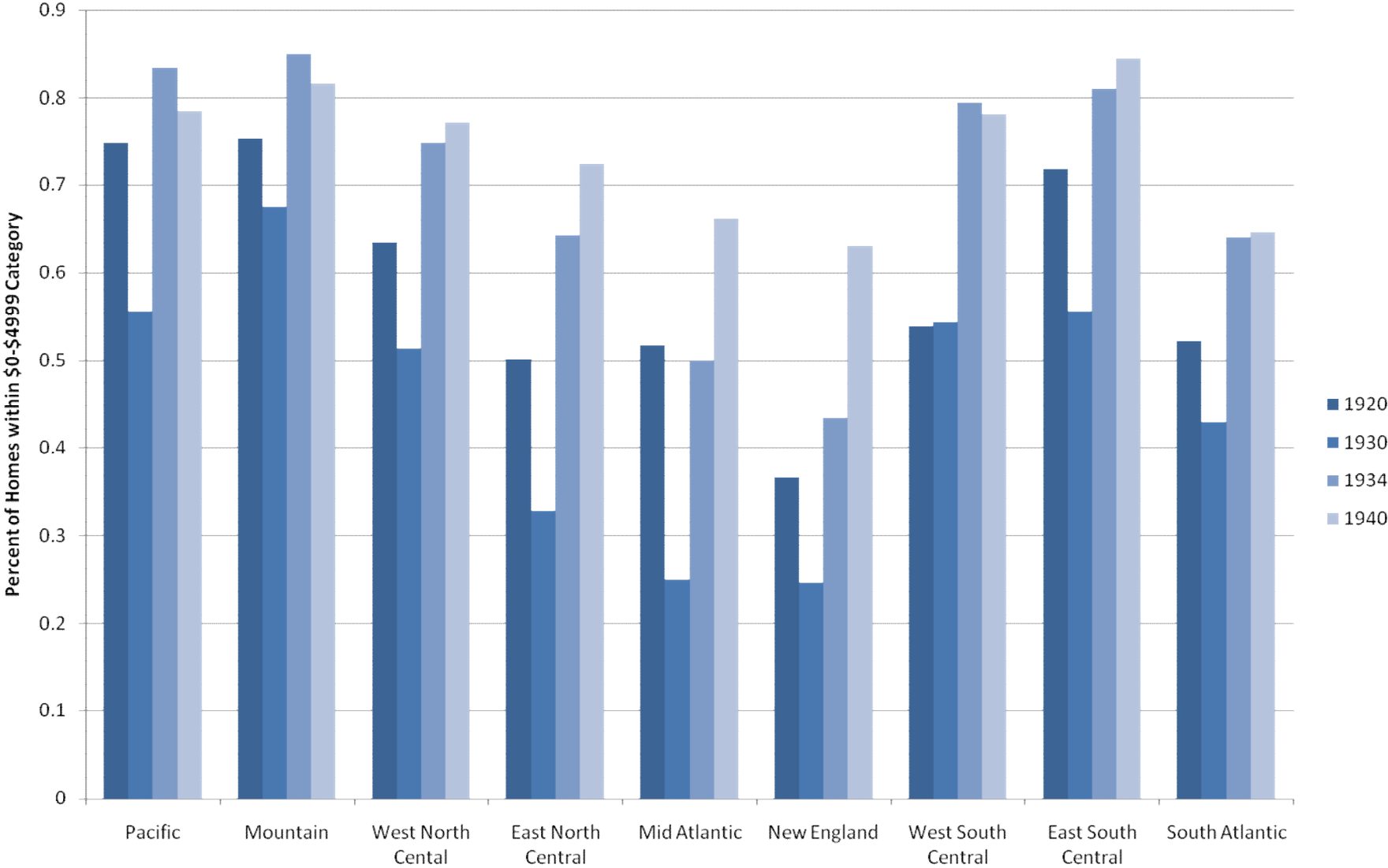
## Regression Results

Table 2

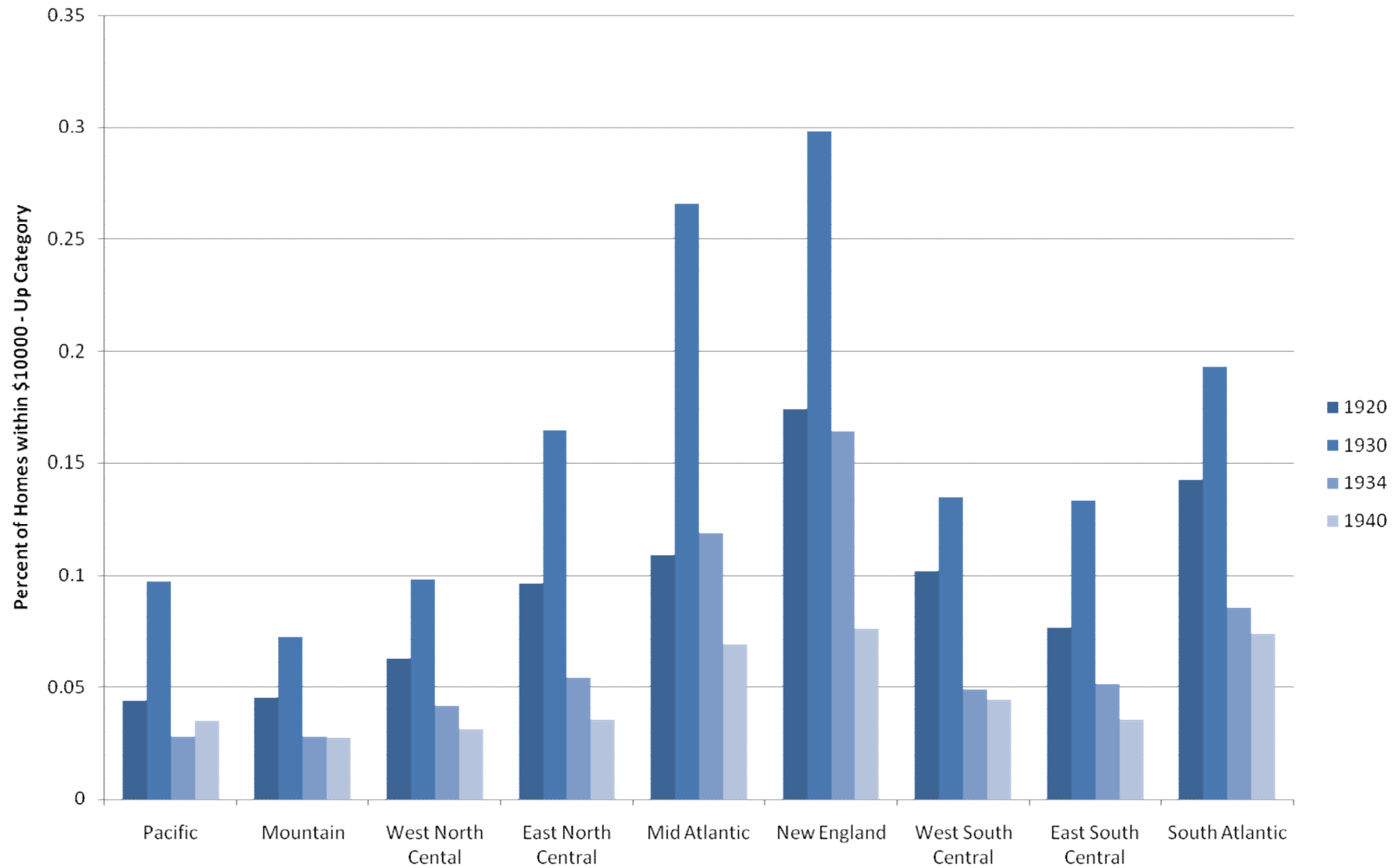
Change in the Average Values of Homes between 1930 - 34	<b>OSD</b>	<b>P-Value</b>
Average Value of Mortgaged Homes in 1920	<b>-0.309</b>	0.050
Change in the Average Values of Homes between 1920 - 30	<b>-0.609</b>	0.000
Manufacturing Earnings per Employee, 1929	<b>0.236</b>	0.300
Growth Rate of Manufacturing Earnings Per Mfg Employee, 1929-33	<b>0.072</b>	0.624
Growth Rate of Average Number of Mfg Earners, 1929-33	<b>0.168</b>	0.370
Percent FDIC Banks Suspended from 1930-32, Base Year = 1929	<b>0.182</b>	0.234
Per Capita Tax Returns, 1929	<b>0.544</b>	0.021
Change in Tax Returns, 1933 - 1929	<b>0.567</b>	0.003
Unemployment as Percent of Population, 1930	<b>-0.342</b>	0.068
Layoffs as Percent of Population, 1930	<b>0.232</b>	0.183
Percent Illiterate, 1930	<b>0.356</b>	0.079
Constant	<b>---</b>	0.075

Share of Homes within \$0 - \$4999 by Census Region and Year (51 Cities)

Figure 7



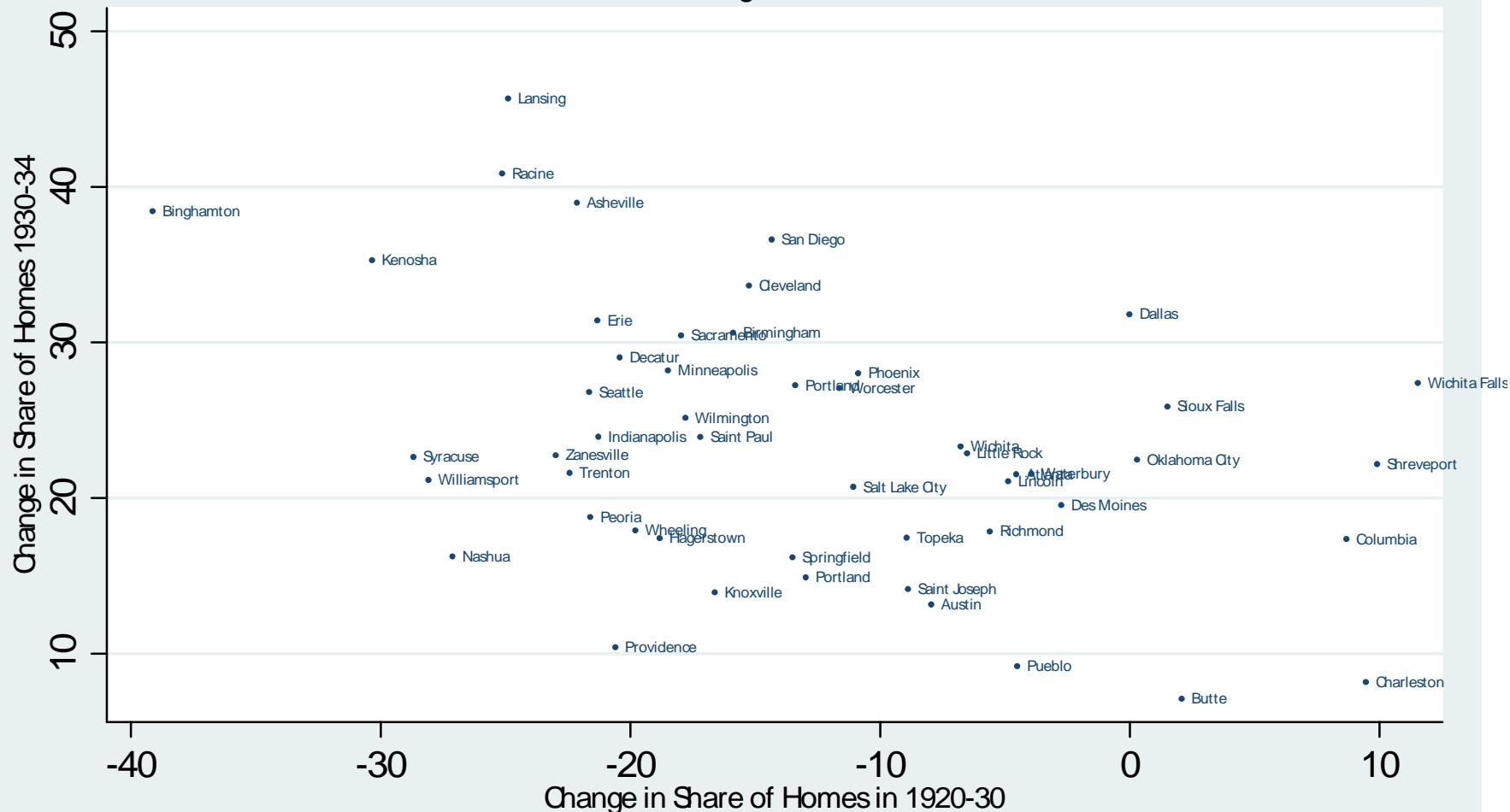
Share of Homes \$10000 - Up by Census Region and Year  
Figure 10



# Reversion

Change in Share of Homes Valued \$0-4999 between 1930-34  
Versus Change in Share of Homes Valued \$0-4999 in 1920-30

Figure 13



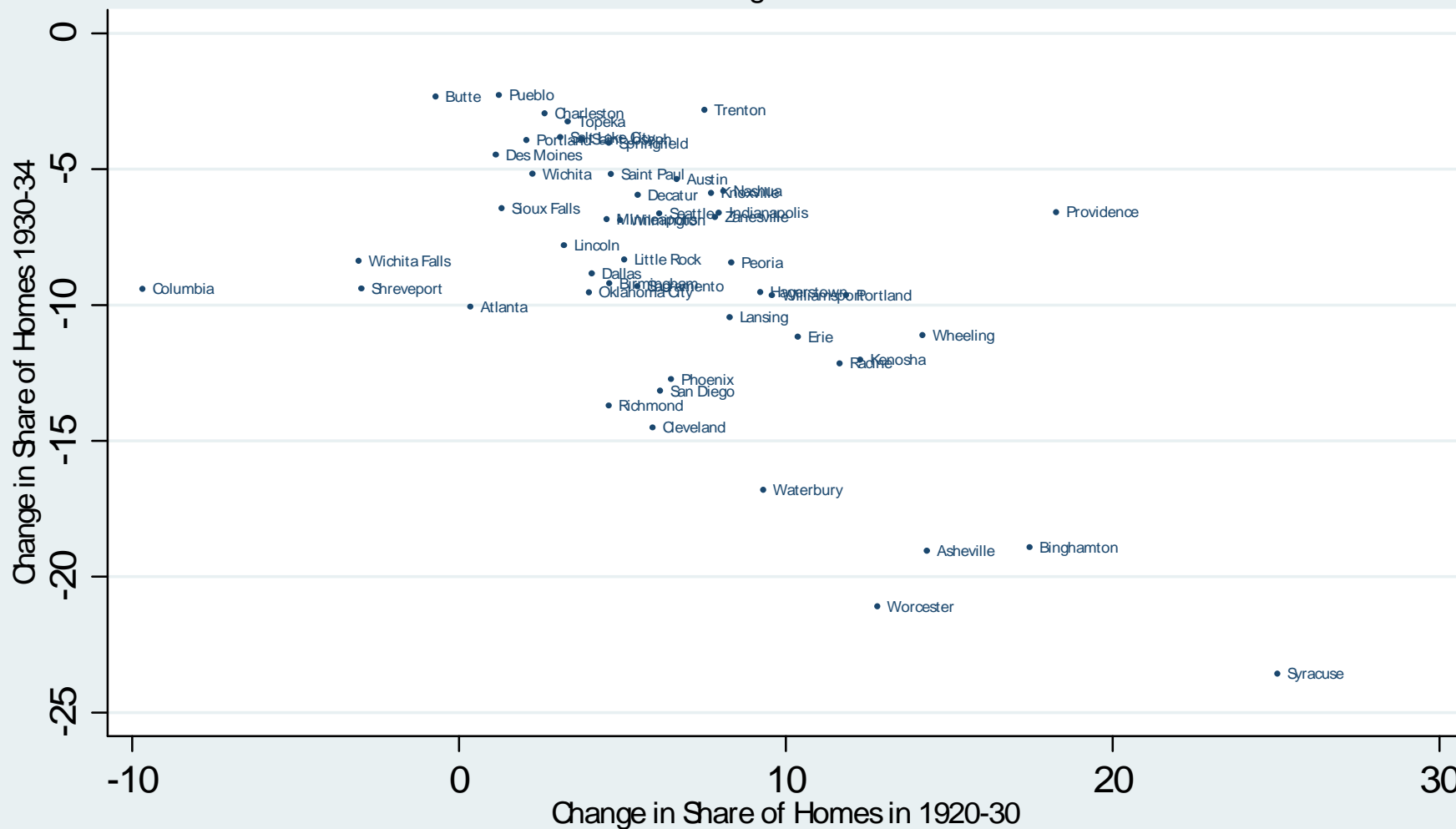
Note: Contains Data on 51 Cities



Reversion

Change in Share of Homes Valued \$10000 - Up between 1930-34  
Versus Change in Share of Homes Valued \$10000 - Up in 1920-30

Figure 14



Note: Contains Data on 51 Cities

# Summary Statistics

Table 5

Variable	Obs	Mean	SE	Min	Max
Change in Share of Homes Valued \$0-\$4999 between 1930 and 1934	51	23.52	8.52	7.09	45.67
Change in Share of Homes Valued \$5000-\$7499 between 1930 and 1934	51	-9.50	6.32	-25.82	7.23
Change in Share of Homes Valued \$7500-\$9999 between 1930 and 1934	51	-5.16	3.04	-15.69	-1.20
Change in Share of Homes Valued \$10000-Up between 1930 and 1934	51	-8.86	4.83	-23.57	-2.27
Share of Homes Valued \$0-\$4999 in 1920	51	60.01	15.17	26.09	90.22
Share of Homes Valued \$5000-\$7499 in 1920	51	22.85	7.49	6.83	44.23
Share of Homes Valued \$7500-\$9999 in 1920	51	8.02	4.32	1.56	19.21
Share of Homes Valued \$10000-Up in 1920	51	9.11	6.10	1.23	30.80
Change in Share of Homes Valued \$0-\$4999 between 1920 and 1930	51	-13.04	11.23	-39.13	11.54
Change in Share of Homes Valued \$5000-\$7499 between 1920 and 1930	51	4.18	5.46	-10.56	13.15
Change in Share of Homes Valued \$7500-\$9999 between 1920 and 1930	51	2.53	3.94	-5.63	13.80
Change in Share of Homes Valued \$10000-Up between 1920 and 1930	51	6.34	5.75	-9.68	25.04
Manufacturing Earnings per Employee, 1929	51	1270.53	184.83	823.06	1690.00
Unemployment as Percent of Population, 1930	51	2.24	0.84	0.79	4.60
Layoffs as Percent of Population, 1930	51	0.69	0.46	0.17	2.42
Percent FDIC Banks Suspended from 1930-32, Base Year = 1929	51	23.93	14.68	0.00	62.50
Growth Rate of Manufacturing Earnings Per Mfg Employee, 1929-33	50	-0.38	0.11	-0.70	-0.21
Per Capita Tax Returns, 1929	51	0.04	0.01	0.01	0.07
Change in Tax Returns, 1933 - 1929	51	0.00	0.01	-0.04	0.01
Percent Illiterate, 1930	51	3.16	3.01	0.31	16.97
Growth Rate of Average Number of Mfg Earners, 1929-33	50	-0.38	0.20	-0.80	0.23

Table 6 - Regression Results - Change in Share of Housing between 1930 - 34

	\$0 - \$4999			\$10000 - Up		
	Coef	P-Value	OSD	Coef	P-Value	OSD
Share of Homes Valued \$0-\$4999 in 1920	0.028	0.936	<b>0.050</b>	---	---	---
Share of Homes Valued \$5000-\$7499 in 1920	0.615	0.094	<b>0.541</b>	0.083	0.351	<b>0.129</b>
Share of Homes Valued \$7500-\$9999 in 1920	0.690	0.433	<b>0.350</b>	-0.456	0.068	<b>-0.407</b>
Share of Homes Valued \$10000-Up in 1920	---	---	---	-0.487	0.002	<b>-0.615</b>
Change in Share of Homes Valued \$0-\$4999 between 1920 and 1930	-0.098	0.683	<b>-0.129</b>	---	---	---
Change in Share of Homes Valued \$5000-\$7499 between 1920 and 1930	0.733	0.018	<b>0.470</b>	-0.084	0.414	<b>-0.095</b>
Change in Share of Homes Valued \$7500-\$9999 between 1920 and 1930	0.416	0.517	<b>0.193</b>	-0.368	0.065	<b>-0.300</b>
Change in Share of Homes Valued \$10000-Up between 1920 and 1930	---	---	---	-0.456	0.000	<b>-0.542</b>

Table 6 - Regression Results - Change in Share of Housing between 1930 - 34

Rest of Regression	\$0 - \$4999			\$10000 - Up		
	Coef	P- Value	<b>OSD</b>	Coef	P- Value	<b>OSD</b>
Manufacturing Earnings per Employee, 1929	0.005	0.510	<b>0.109</b>	-0.005	0.119	<b>-0.194</b>
Unemployment as Percent of Population, 1930	4.380	0.005	<b>0.430</b>	-0.825	0.186	<b>-0.143</b>
Layoffs as Percent of Population, 1930	-8.695	0.001	<b>-0.473</b>	2.118	0.036	<b>0.203</b>
Percent FDIC Banks Suspended from 1930-32, Base Year = 1929	-0.081	0.243	<b>-0.140</b>	0.011	0.710	<b>0.033</b>
Growth Rate of Manufacturing Earnings Per Mfg Employee, 1929-33	10.912	0.224	<b>0.144</b>	-2.460	0.512	<b>-0.057</b>
Per Capita Tax Returns, 1929	-377.210	0.003	<b>-0.542</b>	120.408	0.020	<b>0.305</b>
Change in Tax Returns, 1933 - 1929	-568.202	0.000	<b>-0.566</b>	193.957	0.003	<b>0.340</b>
Percent Illiterate, 1930	-0.576	0.213	<b>-0.203</b>	0.419	0.035	<b>0.261</b>
Growth Rate of Average Number of Mfg Earners, 1929-33	7.486	0.217	<b>0.176</b>	-4.881	0.060	<b>-0.203</b>
R <sup>2</sup>		0.7068			0.8384	

# Percent Change in High Range of Homes in Manhattan between 1929 - 1935 Versus Log of High Range of Homes in 1929

Figure 21



# Summary Statistics New York Sample

Variable	Obs	Mean	Std. Dev.	Min	Max
Housing in 1929 - Low Range	581	9077	5762	1500	50000
Housing in 1929 - High Range	581	15620	20735	4000	250000
Housing in 1935 - Low Range	581	5398	3049	500	25000
Housing in 1935 - High Range	581	9095	10166	2500	125000
Area Contains Brick Housing	581	0.68	0.47	0	1
Area Contains Frame Housing	581	0.73	0.44	0	1
Area Contains Masonry Housing	581	0.11	0.31	0	1
Area Contains Stucco Housing	581	0.15	0.36	0	1
Repair - Good	581	0.26	0.44	0	1
Repair - Good to Fair	581	0.23	0.42	0	1
Repair - Fair	581	0.26	0.44	0	1
Repair - Fair to Poor	581	0.15	0.36	0	1
Repair - Poor	581	0.10	0.30	0	1
Security Grade - A	581	0.03	0.17	0	1
Security Grade - B	581	0.18	0.38	0	1
Security Grade - C	581	0.50	0.50	0	1
Security Grade - D	581	0.30	0.46	0	1
Professional & Executives	581	0.14	0.35	0	1
White Collar & Clerks	581	0.63	0.48	0	1
Skilled Labor	581	0.26	0.44	0	1
Unskilled Labor	581	0.46	0.50	0	1
Percent Black in Neighborhood	580	2.69	8.99	0	90
Average Age of Dwellings	579	24.29	10.97	5.5	60
Family Income - Low Range	581	1903	1236	200	10000
Family Income - High Range	581	5522	11619	700	100000

## New York City Neighborhood Results

ALL BOROUGHES

LogValue in 1929 - Low Range  
 LogValue in 1929 - High Range  
 Area Contains Brick Housing  
 Area Contains Frame Housing  
 Area Contains Masonry Housing  
 Area Contains Stucco Housing  
 Repair - Good  
 Repair - Good to Fair  
 Repair - Fair  
 Repair - Fair to Poor  
 Security Grade - A  
 Security Grade - B  
 Security Grade - C  
 Professional & Executives  
 White Collar & Clerks  
 Skilled Labor  
 Unskilled Labor  
 Percent Black in Neighborhood  
 Average Age of Dwellings  
 LogFamily Income - Low Range  
 LogFamily Income - High Range  
 Average Number of Rooms  
 Constant

Log Change Between 20's High and 1935			
Low Range		High Range	
Coef	P - Value	Coef	P - Value
-0.147	0.000	---	---
---	---	-0.281	0.000
0.052	0.022	0.061	0.006
-0.095	0.000	-0.099	0.000
0.042	0.203	0.058	0.081
0.002	0.931	0.036	0.157
0.058	0.192	0.071	0.097
0.023	0.540	0.075	0.044
0.065	0.079	0.081	0.025
-0.002	0.956	0.087	0.013
-0.117	0.119	0.173	0.027
-0.052	0.267	-0.007	0.890
-0.033	0.282	-0.040	0.186
-0.013	0.682	-0.024	0.445
-0.042	0.075	0.022	0.363
-0.051	0.017	-0.025	0.238
-0.060	0.026	-0.050	0.058
-0.002	0.146	0.000	0.650
-0.003	0.003	0.001	0.594
0.014	0.539	---	---
---	---	0.034	0.136
---	---	---	---
0.867	0.001	1.844	0.000

Number of Observations

578

578

R<sup>2</sup>

Check with and without ADs

0.1419

0.2612

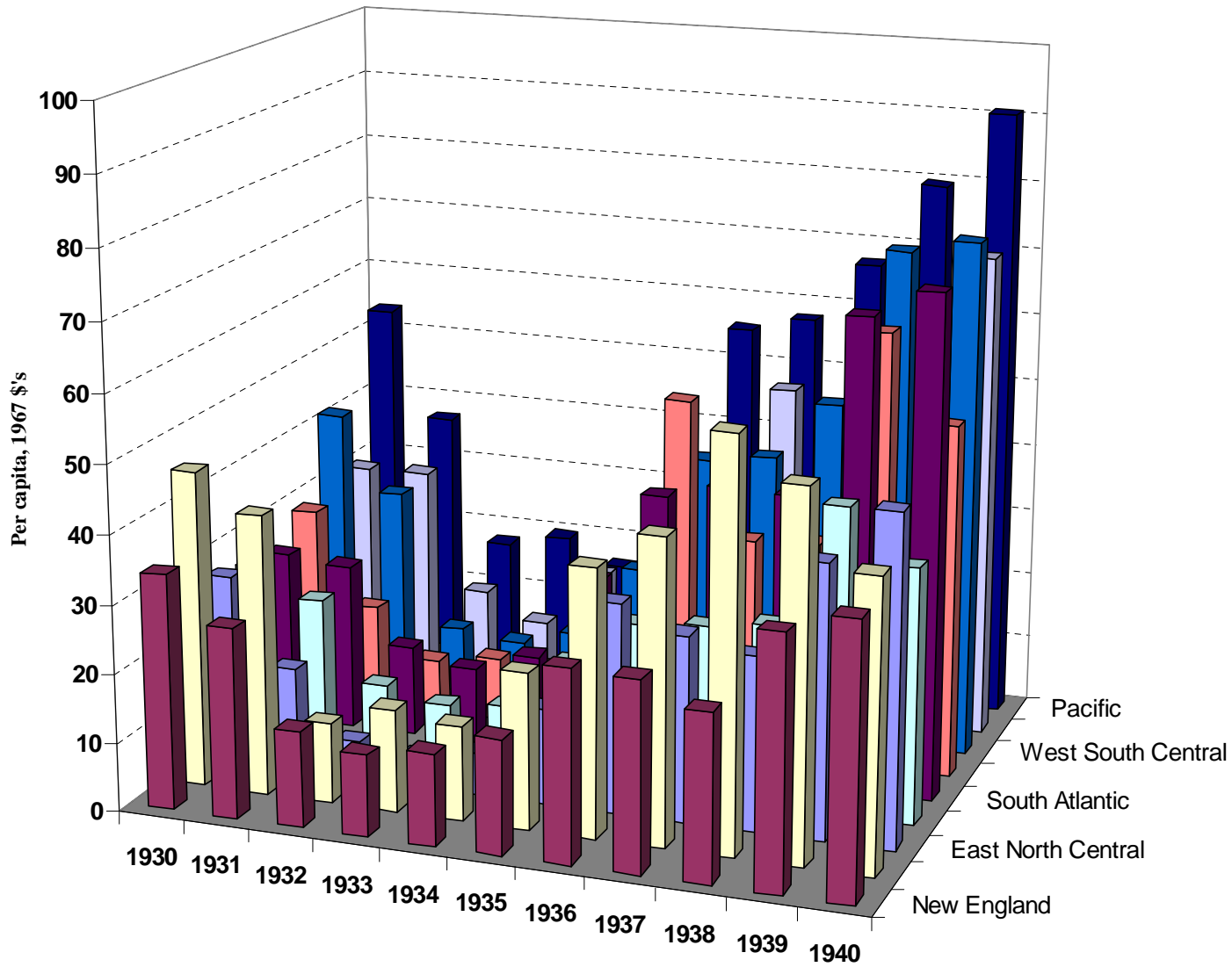
# NYC Neighborhood Results, Avg. Rooms

	Log Change Between 1929 and 1935			
	Low Range		High Range	
Three Boroughs: Bronx, Brooklyn, and Richmond	Coef	P - Value	Coef	P - Value
LogValue in 1929 - Low Range	-0.078	0.013	---	---
LogValue in 1929 - High Range	---	---	-0.383	0.000
Area Contains Brick Housing	0.022	0.473	0.069	0.018
Area Contains Frame Housing	0.024	0.426	-0.043	0.125
Area Contains Masonry Housing	0.006	0.877	0.069	0.065
Area Contains Stucco Housing	-0.014	0.620	0.012	0.662
Repair - Good	0.121	0.035	0.132	0.012
Repair - Good to Fair	0.025	0.611	0.129	0.005
Repair - Fair	0.069	0.114	0.129	0.002
Repair - Fair to Poor	0.006	0.894	0.117	0.003
Security Grade - A	0.225	0.016	0.239	0.005
Security Grade - B	-0.006	0.913	0.020	0.696
Security Grade - C	-0.021	0.579	0.001	0.985
Professional & Executives	0.016	0.645	0.035	0.302
White Collar & Clerks	0.035	0.238	0.002	0.928
Skilled Labor	0.017	0.494	-0.009	0.685
Unskilled Labor	-0.027	0.380	-0.036	0.204
Percent Black in Neighborhood	-0.005	0.000	-0.001	0.507
Average Age of Dwellings	-0.002	0.096	-0.002	0.037
Family Income - Low Range	-0.024	0.402	---	---
Family Income - High Range	---	---	0.051	0.091
Average Number of Rooms	-0.011	0.116	-0.017	0.011
Constant	0.340	0.274	2.698	0.000
Number of Observations	336		336	
R <sup>2</sup>	0.2035		0.3953	



**FIGURE 4**

**Housing Construction by Geographic Region: 1930 to 1940**



## Summary Statistics for Table 9

Variable	Obs	Mean	SE	Min	Max
Change in Residential Housing Construction Expenditures 1930-34	277	-12.00	12.09	-96.28	4.42
Change in Residential Housing Construction Expenditures 1934-40	277	17.12	14.41	-2.75	101.73
Percent Housing Stock Created Between 1920-29	277	25.09	12.82	1.33	74.31
Per Capita Stock of Housing	277	0.28	0.05	0.09	0.80
Manufacturing Earnings per Employee, 1929	277	1303.01	211.59	694.77	1841.09
Growth Rate of Manufacturing Earnings Per Mfg Employee, 1929-33	274	-0.39	0.10	-0.87	-0.15
Growth Rate of Manufacturing Earnings Per Mfg Employee, 1935-39	277	0.12	0.08	-0.14	0.38
Growth Rate of Average Number of Mfg Earners, 1929-33	274	-0.40	0.19	-1.09	0.23
Growth Rate of Average Number of Mfg Earners, 1935-39	277	0.05	0.14	-0.49	0.50
Per Capita Tax Returns, 1929	277	0.04	0.02	0.01	0.10
Change in Per Capita Tax Returns, 1933 - 1929	277	0.00	0.01	-0.04	0.01
Change in Per Capita Tax Returns, 1935 - 1929	277	0.03	0.01	0.01	0.07
Percent FDIC Banks Suspended from 1930-32, Base Year = 1929	277	26.86	19.03	0.00	90.00
Percent FDIC Banks Suspended from 1933-36, Base Year = 1929	277	0.93	3.56	0.00	35.48
Unemployment as Percent of Population, 1930	277	2.44	0.83	0.61	4.66
Layoffs as Percent of Population, 1930	277	0.79	0.52	0.06	3.44
Percent Unemployed, Partially Unemployed, and Emergency Work, 1937	277	9.43	2.59	4.08	16.92
Percent Illiterate, 1930	277	3.25	2.27	0.31	16.97
Per Capita HOLC Loans, 1933-36	276	35.80	20.80	1.67	123.33
Per Capita FHA Insured Loans, 1934-39	277	27.29	21.52	2.66	176.70
Per Capita Public Works and Relief, 1933-39	277	122.35	44.69	39.80	325.65

## Regression Results for Building Permits

Table 10

Change in Building Expenditures per Capita, 1930-

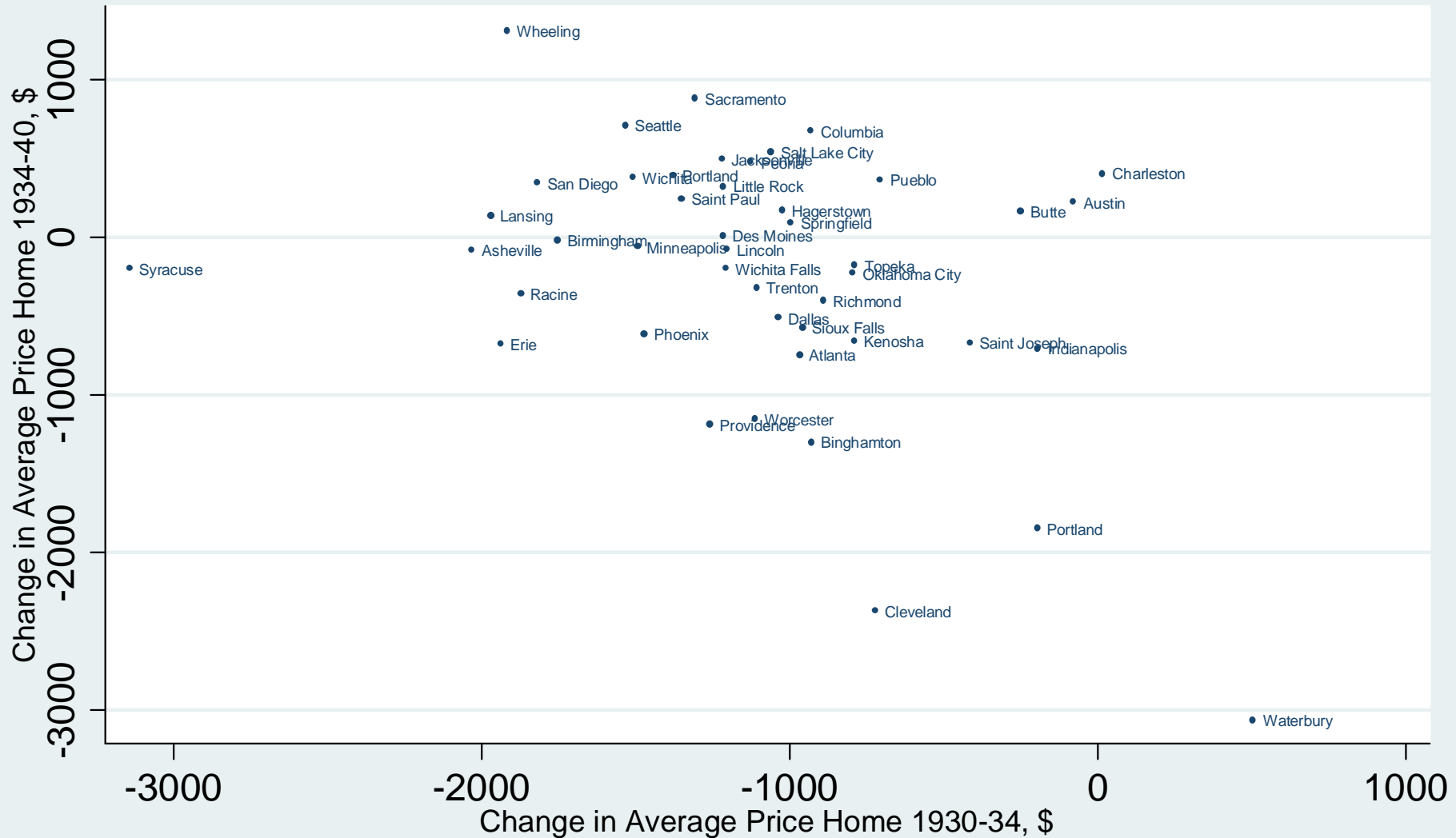
34

	Coef	P-Value	OSD
Percent Housing Stock Created Between 1920-29	-0.253	0.000	<b>-0.275</b>
Per Capita Stock of Housing	-39.633	0.002	<b>-0.172</b>
Manufacturing Earnings per Employee, 1929	-0.002	0.651	<b>-0.040</b>
Unemployment as Percent of Population, 1930	4.294	0.000	<b>0.300</b>
Layoffs as Percent of Population, 1930	-0.905	0.516	<b>-0.039</b>
Pct FDIC Banks Suspended from 30-32, Base Year = 1929	0.054	0.171	<b>0.085</b>
Growth Rate of Mfg Earnings Per Mfg Employee, 1929-33	3.698	0.630	<b>0.032</b>
Per Capita Tax Returns, 1929	-300.3	0.000	<b>-0.381</b>
Change in Per Capita Tax Returns, 1933 – 1929	-126.3	0.212	<b>-0.087</b>
Percent Illiterate, 1930	0.147	0.647	<b>0.029</b>
Growth Rate of Average Number of Mfg Earners, 1929-33	8.208	0.044	<b>0.130</b>
Constant	13.225	0.073	---

# Change in Average Priced Home between 1934-40 Versus Change in Average Priced Homes between 1930-34

Rebound

Figure 6



Note: Contains Data on 44 Cities

## Summary Statistics for CWA City Samples, 1934-40

Table 3

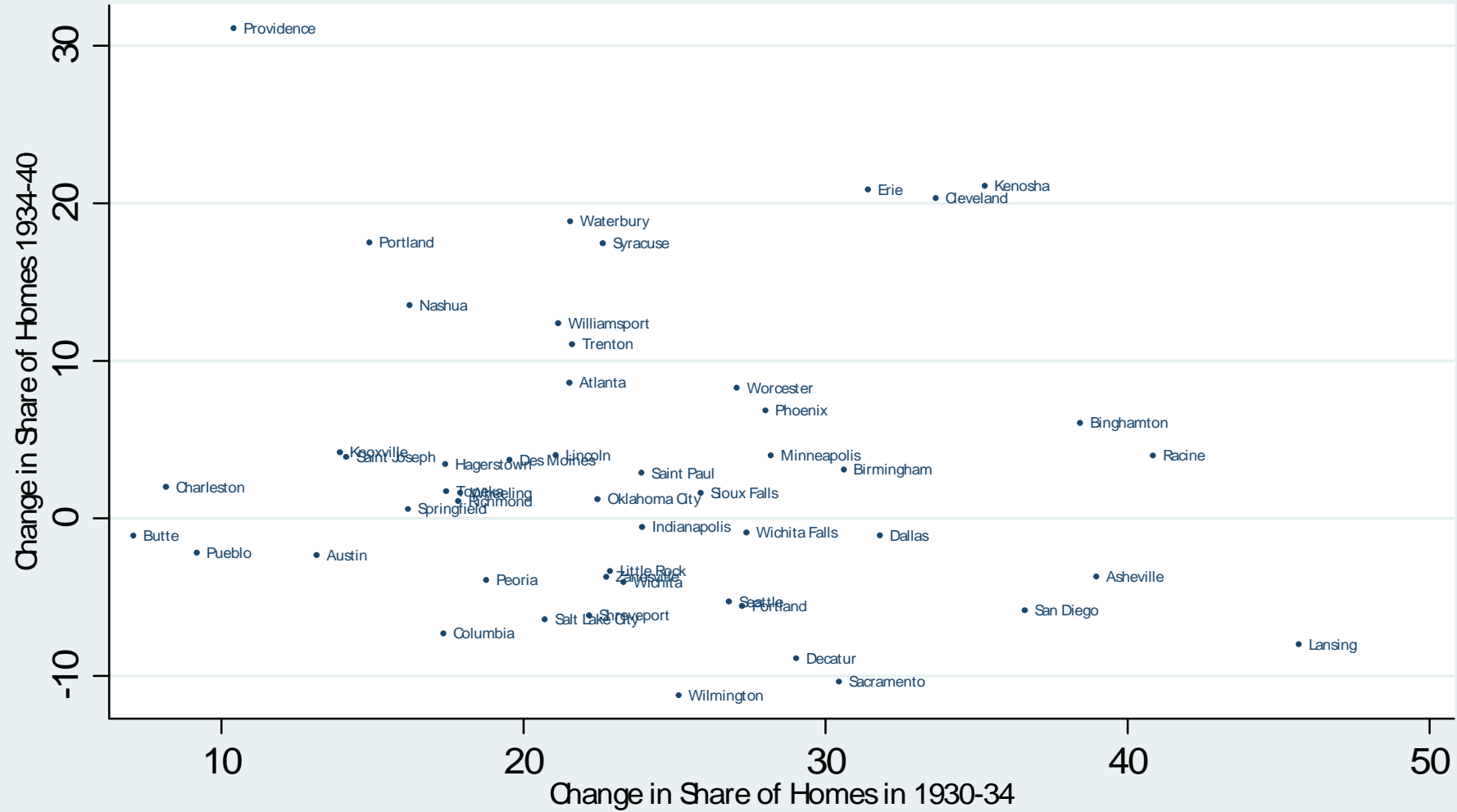
Variable	Obs	Mean	SE	Min	Max
Change in Average Value of Homes between 1934 - 40	44	-235	826	-3062	1312
Average Value of Homes in 1930	44	5349	1319	2535	9043
Change in Average Value of Homes between 1930 - 34	44	-1143	654	-3142	505
Manufacturing Earnings per Employee, 1929	44	1282	187	823	1690
Growth Rate of Manufacturing Earnings Per Mfg Employee, 1925-39	43	0.11	0.09	-0.09	0.33
Growth Rate of Average Number of Mfg Earners, 1935-39	44	0.05	0.18	-0.48	0.34
Percent FDIC Banks Suspended from 1933-36, Base Year = 1929	44	0.34	1.59	0.00	8.70
Per Capita Tax Returns, 1929	44	0.04	0.01	0.01	0.07
Change in Tax Returns, 1935 - 1939	44	0.03	0.01	0.01	0.07
Percent Unemployed, Partially Unemployed, and Emergency Work, 1937	44	9.17	1.77	6.53	12.89
Percent Illiterate, 1930	44	3.15	3.08	0.31	16.97
Per Capita Public Works and Relief, 1933-39	44	135.07	60.56	66.97	325.65
Per Capita HOLC Loans, 1933-36	44	39.12	24.89	6.13	123.33
Per Capita FHA Insured Loans, 1934-39	44	31.36	19.66	4.18	92.72

Average Value Regressions

Table 4	OSD	P-Value
Change in the Average Values of Homes between 1934 - 40		
Average Value of Homes in 1930	-0.815	0.000
Change in Average Value of Homes between 1930 - 34	-0.837	0.000
Manufacturing Earnings per Employee, 1929	-0.396	0.006
Growth Rate of Manufacturing Earnings Per Mfg Employee, 1925-39	0.031	0.751
Growth Rate of Average Number of Mfg Earners, 1935-39	-0.203	0.021
Percent of Banks Suspended from 1933-36, Base Year = 1929	0.054	0.531
Per Capita Tax Returns, 1929	0.116	0.307
Change in Tax Returns, 1935 - 1939	0.271	0.057
Percent Unemployed, Partially Unemployed, and Emergency Work, 1937	-0.261	0.011
Percent Illiterate, 1930	0.225	0.082
Per Capita Public Works and Relief, 1933-39	0.163	0.149
Per Capita HOLC Loans, 1933-36	-0.110	0.255
Per Capita FHA Insured Loans, 1934-39	-0.087	0.416
Constant	---	0.000

# Change in Share of Homes Valued \$0-4999 between 1934-40 Versus Change in Share of Homes Valued \$0-4999 in 1930-34

Figure 15



Note: Contains Data on 51 Cities





Table 8 - Regression Results - Change in Share of Housing between 1934 - 40

	\$0 - \$4999			\$10000 - Up		
	Coef	P-Value	OSD	Coef	P-Value	OSD
Share of Homes Valued \$0-\$4999 in 1930	-0.601	0.211	-1.093	---	---	---
Share of Homes Valued \$5000-\$7499 in 1930	-0.141	0.796	-0.114	0.012	0.892	0.028
Share of Homes Valued \$7500-\$9999 in 1930	0.012	0.993	0.006	0.059	0.834	0.095
Share of Homes Valued \$10000-Up in 1930	---	---	---	-0.722	0.000	-1.863
Change in Share of Homes Valued \$0-\$4999 between 1930 and 1934	-0.812	0.124	-0.749	---	---	---
Change in Share of Homes Valued \$5000-\$7499 between 1930 and 1934	-0.333	0.584	-0.228	-0.035	0.746	-0.073
Change in Share of Homes Valued \$7500-\$9999 between 1930 and 1934	0.065	0.962	0.021	0.181	0.517	0.179
Change in Share of Homes Valued \$10000-Up between 1930 and 1934	---	---	---	-0.849	0.000	-1.341

Table 8 - Regression Results - Change in Share of Housing between 1934 - 40

Rest of Regression	\$0 - \$4999			\$10000 - Up		
	Coef	P-		Coef	P-	
		Value	OSD		Value	OSD
Manufacturing Earnings per Employee, 1929	0.020	0.015	0.396	-0.005	0.044	-0.277
Percent Unemployed, Partially Unemployed, and Emergency Work, 1937	1.592	0.006	0.330	-0.437	0.007	-0.273
Percent FDIC Banks Suspended from 1933-36, Base Year = 1929	0.073	0.773	0.029	0.070	0.331	0.083
Growth Rate of Manufacturing Earnings Per Mfg Employee, 1925-39	-3.657	0.756	-0.035	-0.673	0.840	-0.019
Per Capita Tax Returns, 1929-1939	-76.626	0.456	-0.101	24.552	0.398	0.098
Percent Illiterate, 1930	-190.449	0.146	-0.256	31.804	0.385	0.129
Growth Rate of Average Number of Mfg Earners, 1935-39	-0.337	0.511	-0.110	0.287	0.054	0.282
Per Capita Public Works and Relief, 1933-39	7.519	0.198	0.137	-1.383	0.399	-0.076
Per Capita FHA Insured Loans, 1933-36	-0.019	0.293	-0.123	0.006	0.221	0.122
Per Capita FHA Insured Loans, 1934-39	0.059	0.299	0.152	-0.010	0.533	-0.077
R <sup>2</sup>	0.021	0.761	0.043	-0.023	0.247	-0.142
		0.746			0.819	

# Building Permit Expenditures Regressions, 1934-1940

Table 11

Change in Per Cap Building Expenditures, 1934-1940	Coef	P-Value	<b>OSD</b>
Percent Housing Stock Created Between 1920-29	0.306	0.000	<b>0.272</b>
Per Capita Stock of Housing	32.914	0.021	<b>0.120</b>
Manufacturing Earnings per Employee, 1929	-0.006	0.245	<b>-0.094</b>
Pct Unemployed, Partially Unemp, and Emerg Work, 1937	-0.898	0.010	<b>-0.162</b>
Pct FDIC Banks Suspended from 1933-36, Base Year 1929	-0.210	0.307	<b>-0.052</b>
Growth Rate of Mfg Earnings Per Mfg Employee, 1935-39	-6.823	0.526	<b>-0.038</b>
Per Capita Tax Returns, 1929	-174.321	0.008	<b>-0.183</b>
Change in Per Capita Tax Returns, 1935 - 1939	297.125	0.005	<b>0.257</b>
Percent Illiterate, 1930	0.950	0.016	<b>0.149</b>
Growth Rate of Average Number of Mfg Earners, 1935-39	-4.266	0.413	<b>-0.043</b>
Per Capita HOLC Loans, 1933-36	-0.087	0.051	<b>-0.125</b>
Per Capita FHA Insured Loans, 1934-39	0.149	0.004	<b>0.223</b>
Per Capita Public Works and Relief, 1933-39	0.075	0.000	<b>0.234</b>
Constant	2.387	0.762	---