

# 5 Census Regressions: 2011 vs each decade, all and cities

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## 2011 ~ 1971 to 2001: all CoBs, all zones

Formula (d = 1971 to 2001):  $x_{ij2011} \sim x_{ij-d} + w-dq + migshareMinusOwn-d + ea-d + popPerAcre-d$

[1] "DECADE 2011 ~ 1971"

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
  i, " + ea", i, " + popPerAcre", i), data = sheet5)
```

Residuals:

Min	1Q	Median	3Q	Max
-1.5595	-0.0613	-0.0274	0.0209	3.8353

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-0.58542802	0.01508671	-38.804	< 2e-16 ***
xij1971	0.21429929	0.00211572	101.289	< 2e-16 ***
w1971q	0.20338139	0.00305224	66.634	< 2e-16 ***
migshareMinusOwn1971	0.00174800	0.00026215	6.668	0.000000000026 ***
ea1971	0.00649231	0.00015878	40.888	< 2e-16 ***
popPerAcre1971	0.00496260	0.00004598	107.939	< 2e-16 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.1831 on 180834 degrees of freedom

Multiple R-squared: 0.277, Adjusted R-squared: 0.2769

F-statistic: 1.385e+04 on 5 and 180834 DF, p-value: < 2.2e-16

[1] "DECADE 2011 ~ 1981"

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
  i, " + ea", i, " + popPerAcre", i), data = sheet5)
```

Residuals:

Min	1Q	Median	3Q	Max
-1.5385	-0.0566	-0.0214	0.0186	3.7089

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-0.15940207	0.00594855	-26.80	<2e-16 ***
xij1981	0.34282997	0.00211395	162.18	<2e-16 ***
w1981q	0.24516394	0.00303440	80.80	<2e-16 ***
migshareMinusOwn1981	0.00427035	0.00019055	22.41	<2e-16 ***
ea1981	0.00187891	0.00006657	28.22	<2e-16 ***
popPerAcre1981	0.00462737	0.00004938	93.72	<2e-16 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.1689 on 180834 degrees of freedom

Multiple R-squared: 0.3851, Adjusted R-squared: 0.3851

F-statistic: 2.265e+04 on 5 and 180834 DF, p-value: < 2.2e-16

```
[1] "DECADE 2011 ~ 1991"
```

```
Call:
```

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",  
  i, " + ea", i, " + popPerAcre", i), data = sheet5)
```

```
Residuals:
```

Min	1Q	Median	3Q	Max
-2.0703	-0.0528	-0.0154	0.0196	3.4725

```
Coefficients:
```

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	0.01718709	0.00491203	3.499	0.000467 ***
xij1991	0.44086791	0.00218333	201.925	< 2e-16 ***
w1991q	0.23883821	0.00307709	77.618	< 2e-16 ***
migshareMinusOwn1991	0.00644174	0.00017625	36.548	< 2e-16 ***
ea1991	-0.00028226	0.00005527	-5.107	0.000000328 ***
popPerAcre1991	0.00426192	0.00005124	83.175	< 2e-16 ***

```
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 0.159 on 180834 degrees of freedom
```

```
Multiple R-squared:  0.4551,    Adjusted R-squared:  0.455
```

```
F-statistic: 3.02e+04 on 5 and 180834 DF,  p-value: < 2.2e-16
```

```
[1] "DECADE 2011 ~ 2001"
```

```
Call:
```

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",  
  i, " + ea", i, " + popPerAcre", i), data = sheet5)
```

```
Residuals:
```

Min	1Q	Median	3Q	Max
-1.23993	-0.03981	-0.00916	0.01908	2.51808

```
Coefficients:
```

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	0.25578363	0.00883875	28.94	<2e-16 ***
xij2001	0.67275437	0.00210655	319.36	<2e-16 ***
w2001q	0.22793835	0.00294658	77.36	<2e-16 ***
migshareMinusOwn2001	0.00217652	0.00012777	17.04	<2e-16 ***
ea2001	-0.00282531	0.00009467	-29.84	<2e-16 ***
popPerAcre2001	0.00186608	0.00004370	42.71	<2e-16 ***

```
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 0.1301 on 180834 degrees of freedom
```

```
Multiple R-squared:  0.635, Adjusted R-squared:  0.635
```

```
F-statistic: 6.291e+04 on 5 and 180834 DF,  p-value: < 2.2e-16
```

## Four cities (urban zones): 2011 ~ the other four decades

```
[1] "Glasgow"
[1] "DECADE 2011 ~ 1971"
```

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-3.0181	-0.4082	-0.1840	0.1842	17.6335

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	0.0428415	0.1446397	0.296	0.767
xij1971	0.1156286	0.0052690	21.945	<2e-16 ***
w1971q	0.2687198	0.0077412	34.713	<2e-16 ***
migshareMinusOwn1971	0.0356009	0.0023201	15.345	<2e-16 ***
ea1971	0.0022343	0.0015172	1.473	0.141
popPerAcre1971	0.0048137	0.0004617	10.426	<2e-16 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9637 on 27934 degrees of freedom

Multiple R-squared: 0.1733, Adjusted R-squared: 0.1732

F-statistic: 1171 on 5 and 27934 DF, p-value: < 2.2e-16

```
[1] "DECADE 2011 ~ 1981"
```

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-3.0829	-0.4096	-0.1700	0.1637	17.6931

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	0.9212436	0.0541934	16.999	< 2e-16 ***
xij1981	0.2527456	0.0056856	44.454	< 2e-16 ***
w1981q	0.2587457	0.0085155	30.385	< 2e-16 ***
migshareMinusOwn1981	0.0093847	0.0015826	5.930	0.00000000307 ***
ea1981	-0.0073392	0.0006248	-11.746	< 2e-16 ***
popPerAcre1981	0.0020066	0.0005789	3.466	0.000529 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.9331 on 27934 degrees of freedom

Multiple R-squared: 0.2249, Adjusted R-squared: 0.2248

F-statistic: 1622 on 5 and 27934 DF, p-value: < 2.2e-16

```
[1] "DECADE 2011 ~ 1991"
```

```
Call:
```

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",  
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

```
Residuals:
```

```
      Min       1Q   Median       3Q      Max  
-2.9326 -0.3718 -0.1190  0.1678 17.3912
```

```
Coefficients:
```

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	1.0833646	0.0397006	27.288	<2e-16	***
xij1991	0.4244031	0.0061485	69.025	<2e-16	***
w1991q	0.2408373	0.0091822	26.229	<2e-16	***
migshareMinusOwn1991	0.0201298	0.0016587	12.136	<2e-16	***
ea1991	-0.0111011	0.0004707	-23.587	<2e-16	***
popPerAcre1991	-0.0004906	0.0006238	-0.786	0.432	

```
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 0.8684 on 27934 degrees of freedom
```

```
Multiple R-squared:  0.3287,    Adjusted R-squared:  0.3286
```

```
F-statistic: 2736 on 5 and 27934 DF,  p-value: < 2.2e-16
```

```
[1] "DECADE 2011 ~ 2001"
```

```
Call:
```

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",  
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

```
Residuals:
```

```
      Min       1Q   Median       3Q      Max  
-4.7654 -0.2955 -0.0865  0.1631 16.7938
```

```
Coefficients:
```

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	1.8762243	0.0827882	22.663	< 2e-16	***
xij2001	0.4985077	0.0049789	100.124	< 2e-16	***
w2001q	0.2194093	0.0068547	32.009	< 2e-16	***
migshareMinusOwn2001	0.0212093	0.0013130	16.153	< 2e-16	***
ea2001	-0.0197356	0.0009110	-21.664	< 2e-16	***
popPerAcre2001	0.0017312	0.0005586	3.099	0.00194	**

```
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 0.7775 on 27934 degrees of freedom
```

```
Multiple R-squared:  0.462, Adjusted R-squared:  0.4619
```

```
F-statistic: 4797 on 5 and 27934 DF,  p-value: < 2.2e-16
```

```
[1] "Edinburgh"
```

```
[1] "DECADE 2011 ~ 1971"
```

```
Call:
```

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-3.4655	-0.6323	-0.2525	0.4054	8.6214

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-1.9357493	0.4200612	-4.608	0.0000040963 ***
xij1971	0.1537987	0.0092575	16.613	< 2e-16 ***
w1971q	0.1905084	0.0139557	13.651	< 2e-16 ***
migshareMinusOwn1971	-0.0702298	0.0052234	-13.445	< 2e-16 ***
ea1971	0.0240408	0.0043853	5.482	0.0000000428 ***
popPerAcre1971	0.0505270	0.0009216	54.827	< 2e-16 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.14 on 14074 degrees of freedom

Multiple R-squared: 0.2976, Adjusted R-squared: 0.2974

F-statistic: 1193 on 5 and 14074 DF, p-value: < 2.2e-16

[1] "DECADE 2011 ~ 1981"

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-2.5049	-0.6383	-0.1692	0.4223	8.5078

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	3.942760	0.207182	19.03	<2e-16 ***
xij1981	0.366598	0.010121	36.22	<2e-16 ***
w1981q	0.214906	0.013883	15.48	<2e-16 ***
migshareMinusOwn1981	-0.043471	0.004054	-10.72	<2e-16 ***
ea1981	-0.041432	0.002217	-18.69	<2e-16 ***
popPerAcre1981	0.040256	0.001027	39.22	<2e-16 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.111 on 14074 degrees of freedom

Multiple R-squared: 0.3325, Adjusted R-squared: 0.3323

F-statistic: 1402 on 5 and 14074 DF, p-value: < 2.2e-16

[1] "DECADE 2011 ~ 1991"

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-2.8120	-0.6061	-0.1347	0.4020	8.9346

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	4.335605	0.196801	22.03	<2e-16 ***
xij1991	0.414352	0.009677	42.82	<2e-16 ***
w1991q	0.202166	0.014426	14.01	<2e-16 ***
migshareMinusOwn1991	-0.050524	0.003744	-13.50	<2e-16 ***
ea1991	-0.045533	0.002139	-21.28	<2e-16 ***
popPerAcre1991	0.035306	0.001074	32.87	<2e-16 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.095 on 14074 degrees of freedom  
Multiple R-squared: 0.3514, Adjusted R-squared: 0.3512  
F-statistic: 1525 on 5 and 14074 DF, p-value: < 2.2e-16

[1] "DECADE 2011 ~ 2001"

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-2.9880	-0.5028	-0.0992	0.3844	6.2963

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	12.7268738	0.3693054	34.462	<2e-16 ***
xij2001	0.7156745	0.0078282	91.423	<2e-16 ***
w2001q	0.1052094	0.0112921	9.317	<2e-16 ***
migshareMinusOwn2001	-0.0349056	0.0018110	-19.274	<2e-16 ***
ea2001	-0.1307586	0.0038622	-33.856	<2e-16 ***
popPerAcre2001	0.0158604	0.0007979	19.877	<2e-16 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8784 on 14074 degrees of freedom  
Multiple R-squared: 0.5829, Adjusted R-squared: 0.5828  
F-statistic: 3934 on 5 and 14074 DF, p-value: < 2.2e-16

[1] "Aberdeen"

[1] "DECADE 2011 ~ 1971"

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-8.204	-2.272	-0.458	1.976	20.975

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	98.29246	4.94255	19.887	< 2e-16 ***
xij1971	0.34301	0.01621	21.157	< 2e-16 ***
w1971q	0.17306	0.02032	8.518	< 2e-16 ***
migshareMinusOwn1971	1.12345	0.11329	9.916	< 2e-16 ***
ea1971	-1.00836	0.05137	-19.629	< 2e-16 ***
popPerAcre1971	-0.03835	0.01088	-3.525	0.00043 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 3.794 on 3294 degrees of freedom  
Multiple R-squared: 0.3585, Adjusted R-squared: 0.3575  
F-statistic: 368.2 on 5 and 3294 DF, p-value: < 2.2e-16

[1] "DECADE 2011 ~ 1981"

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",  
i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-9.6153	-2.3551	-0.4193	1.6837	19.7940

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	47.41904	2.68299	17.674	< 2e-16 ***
xij1981	0.38543	0.01709	22.554	< 2e-16 ***
w1981q	0.33312	0.01920	17.354	< 2e-16 ***
migshareMinusOwn1981	0.85374	0.05305	16.094	< 2e-16 ***
ea1981	-0.51351	0.02857	-17.972	< 2e-16 ***
popPerAcre1981	-0.02971	0.01127	-2.636	0.00843 **

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 3.722 on 3294 degrees of freedom  
Multiple R-squared: 0.3829, Adjusted R-squared: 0.3819  
F-statistic: 408.7 on 5 and 3294 DF, p-value: < 2.2e-16

[1] "DECADE 2011 ~ 1991"

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",  
i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-7.5757	-2.1147	-0.3668	1.7018	17.6643

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	68.28149	2.42781	28.12	<2e-16 ***
xij1991	0.31198	0.01504	20.74	<2e-16 ***



w1991q	0.25737	0.01666	15.45	<2e-16 ***
migshareMinusOwn1991	1.11534	0.04064	27.44	<2e-16 ***
ea1991	-0.72347	0.02552	-28.34	<2e-16 ***
popPerAcre1991	-0.13246	0.01157	-11.44	<2e-16 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 3.254 on 3294 degrees of freedom  
Multiple R-squared: 0.5282, Adjusted R-squared: 0.5275  
F-statistic: 737.6 on 5 and 3294 DF, p-value: < 2.2e-16

[1] "DECADE 2011 ~ 2001"

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-7.3346	-1.5346	-0.2452	1.4042	10.2819

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	43.38401	3.33659	13.002	< 2e-16 ***
xij2001	0.72913	0.01616	45.107	< 2e-16 ***
w2001q	0.18397	0.01996	9.218	< 2e-16 ***
migshareMinusOwn2001	0.14706	0.02710	5.426	0.0000000616394232 ***
ea2001	-0.44295	0.03462	-12.796	< 2e-16 ***
popPerAcre2001	-0.08760	0.01131	-7.747	0.0000000000000125 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.782 on 3294 degrees of freedom  
Multiple R-squared: 0.6551, Adjusted R-squared: 0.6546  
F-statistic: 1251 on 5 and 3294 DF, p-value: < 2.2e-16

[1] "Dundee"

[1] "DECADE 2011 ~ 1971"

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-9.4255	-2.1951	-0.7569	1.0919	17.8331

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	29.12948	2.52997	11.514	< 2e-16 ***
xij1971	0.21895	0.01497	14.625	< 2e-16 ***
w1971q	0.12288	0.02586	4.752	0.00000208 ***
migshareMinusOwn1971	1.07728	0.03864	27.880	< 2e-16 ***
ea1971	-0.31633	0.02602	-12.155	< 2e-16 ***

```
popPerAcre1971      0.02944    0.01089    2.704    0.00688 **
```

```
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 3.852 on 4174 degrees of freedom
```

```
Multiple R-squared:  0.2626,    Adjusted R-squared:  0.2617
```

```
F-statistic: 297.3 on 5 and 4174 DF,  p-value: < 2.2e-16
```

```
[1] "DECADE 2011 ~ 1981"
```

```
Call:
```

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",  
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

```
Residuals:
```

Min	1Q	Median	3Q	Max
-12.5988	-2.2481	-0.8208	1.4748	16.8101

```
Coefficients:
```

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	9.26297	1.24137	7.462	0.000000000000103 ***
xij1981	0.32038	0.01550	20.663	< 2e-16 ***
w1981q	0.37560	0.02725	13.784	< 2e-16 ***
migshareMinusOwn1981	0.73124	0.02486	29.418	< 2e-16 ***
ea1981	-0.11043	0.01309	-8.434	< 2e-16 ***
popPerAcre1981	-0.04912	0.01190	-4.128	0.000037328230473 ***

```
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
Residual standard error: 3.76 on 4174 degrees of freedom
```

```
Multiple R-squared:  0.2975,    Adjusted R-squared:  0.2966
```

```
F-statistic: 353.5 on 5 and 4174 DF,  p-value: < 2.2e-16
```

```
[1] "DECADE 2011 ~ 1991"
```

```
Call:
```

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",  
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

```
Residuals:
```

Min	1Q	Median	3Q	Max
-10.8574	-1.9889	-0.6265	1.2821	16.3805

```
Coefficients:
```

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	5.467713	0.828653	6.598	0.000000000000468 ***
xij1991	0.448911	0.014854	30.221	< 2e-16 ***
w1991q	0.415419	0.026508	15.671	< 2e-16 ***
migshareMinusOwn1991	0.328615	0.019490	16.861	< 2e-16 ***
ea1991	-0.080919	0.008925	-9.067	< 2e-16 ***
popPerAcre1991	0.064167	0.009799	6.548	0.000000000000652 ***

```
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Residual standard error: 3.602 on 4174 degrees of freedom  
Multiple R-squared: 0.3552, Adjusted R-squared: 0.3544  
F-statistic: 459.9 on 5 and 4174 DF, p-value: < 2.2e-16

[1] "DECADE 2011 ~ 2001"

Call:

```
lm(formula = paste0("xij2011 ~ xij", i, " + w", i, "q + migshareMinusOwn",
  i, " + ea", i, " + popPerAcre", i), data = citySheets5[[j]])
```

Residuals:

Min	1Q	Median	3Q	Max
-7.6289	-1.2581	-0.3075	1.0960	14.7882

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	17.466623	1.000946	17.450	< 2e-16 ***
xij2001	0.719140	0.011572	62.146	< 2e-16 ***
w2001q	0.278143	0.019806	14.044	< 2e-16 ***
migshareMinusOwn2001	0.213962	0.012570	17.021	< 2e-16 ***
ea2001	-0.210245	0.010779	-19.505	< 2e-16 ***
popPerAcre2001	0.036528	0.007124	5.127	0.000000307 ***

---

Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.691 on 4174 degrees of freedom  
Multiple R-squared: 0.6401, Adjusted R-squared: 0.6397  
F-statistic: 1485 on 5 and 4174 DF, p-value: < 2.2e-16