

**Online Appendices to
Government Programs Can Improve Local Labor Markets: Evidence
from State Enterprise Zones, Federal Empowerment Zones and Federal
Enterprise Communities**

John C. Ham

University of Maryland, IZA and IRP (UW-Madison)

Charles Swenson

Marshall School of Business, University of Southern California

Ayşe İmrohoroğlu

Marshall School of Business, University of Southern California

Heonjae Song

Korea Institute of Public Finance

November 2008

Revised May 2010

Appendix A- Data Steps and Methodology for Comparison to Other Research

1. Matching 1980-2000 Census Tracts and Related Census Data

Some Census Tract definitions/boundaries varied from 1980 to 2000. The following paragraphs discuss our methodology for developing a time series decennial Census database by Census Tract. We first describe the general data sources, then provide “drill down” discussions of processing procedures, the individual Census datasets, and how we combined them.

1.1 *Data Sources*

1980 Census -- Acquired from the historical census data archive at the Center for International Earth Science Information Network (CIESIN) at Columbia University.

1990-Census -- Applied Geographic Solutions (AGS) Thousand Oaks, CA. This was subsequently changed to CIESIN.

2000 Census -- Census 2000 Summary File 3 DVD in ASCII format from the U.S. Census Bureau.

Geographic Equivalency -- MARBLE '98/Geocorr v.3.0 Geographic Correspondence Engine, Office of Social and Economic Data Analysis -- University of Missouri.

1990 Census Tract Boundaries -- Environmental Systems Research Institute (ESRI) Maps and Data CD. Census Tract boundaries in shapefile format were converted to Atlas GIS format for processing.

2000 Census Tract Boundaries -- Environmental Systems Research Institute (ESRI) Maps and Data CD. Census Tract boundaries in shapefile format were converted to Atlas GIS format for processing.

1.2 *Processing Procedures*

Geographic Equivalency File -- A geographic equivalency file was created for purposes of relating 1990 Census Tracts to their equivalent 1980 Census Tracts. Files were created individually for each state using the MARBLE/Geocorr v.3.0 engine at the University of Missouri Office of Social and Economic Data Analysis (OSED). The equivalency file contains essentially three fields:

- 1990 Census Tract
- The equivalent 1980 Census Tract
- An allocation factor to be applied to the 1980 Census Tract

In cases where the 1980 tract definition is exactly the same as the 1990 definition, the allocation factor is 1.0. In cases where a tract was split in 1990, the allocation factor contains the percent of the 1980 area to be allocated to the equivalent 1990 definition. Once downloaded, the 50 state files were combined into a single national file and the numbers of unique tracts for 1990 and 1980 were counted to validate that all tracts had been accounted for.

1.3 *1980 Dataset*

- Historical archive files were downloaded for each of the 50 states from CIESIN FTP site.
- Since the archive file includes records for every level of geography for each state, census tract level records were identified and extracted based on a SUMMARY LEVEL value of "14" (Census Tracts/BNAs) for the required fields.
- The extracted records were converted from the SAS Transport format to DBF format.
- All of the state files were then combined into a single national file and the numbers of census tract records was validated to ensure that there were not missing or duplicated records.

- Once the national file was created, it was re-aggregated to 1990 tract definitions using the geographic equivalency file created with the MARBLE/Geocorr engine.
- The number of 1990 tract definition records were then verified to ensure that there were no missing or duplicated records.
- The national file based on the 1990 tract definitions was then converted to 2000 census tract definitions using Atlas GIS together with 1990 and 2000 Census Tract boundary files. Geospatial processing was performed to allocate demographic attributes from 1990 tract definitions to 2000 tract definitions based on the square mileage of the layered tracts. This approach is similar to that used to convert from 1980 to 1990 but without the use of an equivalency file.

1.4 1990 Dataset

- A single national file was created containing the census tract level records for all states in the U.S. for the required fields on 2000 Census Tract definitions.
- The number of census tract records in the dataset was validated to confirm no missing or duplicated records.

1.5 2000 Dataset

- Since the SF3 DVD includes records for every level of geography for each state, census tract level records were identified and extracted based on a SUMMARY LEVEL value of "140" (Census Tract/BNAs) for the required fields.
- Tract level records were extracted from the required fields and converted to DBF files on a state-by-state basis.
- Individual state files were then merged into a single national file containing records for all census tracts in the U.S.
- All of the states file were then combined into a single national file and the numbers of census tracts records was validated to ensure that there were no missing or duplicated records.

1.6 Combined Time Series Dataset

- In order to produce the combined file, the 1980, 1990, and 2000 files were matched using the common 2000 census tract to create a single flat file.
- The combined flat file was then loaded into Atlas GIS as an attribute table for 2000 census tract boundaries and overlaid with enterprise zone and Federal zone boundaries. Based on whether the centroid (geographic center) of each tract polygon was within an EZ or Federal zone, the appropriate EZ (or Federal zone) identifier was added to each census tract record.

2. Methodology for Comparison to Other Research

2.1 Comparison with Neumark and Kolko (2008) ENTZ impacts

In Table 6, Row A, columns (1) and (3) Neumark and Kolko estimate t^* , which is the difference in the annual growth rate between an ENTZ and NENTZ. Let the normal growth rate of employment be g . Thus the annual growth rate for an ENTZ equals $1+g+t^*$ and for an NENTZ equals $1+g$. Let E_{90} be 1990 average employment in CA. If an ENTZ started January 1 1991, the 2000 Employment E_{2000} for an ENTZ would equal

$$E_{2000}(ENTZ) = (1 + g + t^*)^{10} E_{1990}, \text{ while for an NENTZ it would equal}$$

$$E_{2000}(NENTZ) = (1 + g)^{10} E_{1990}.$$

$$\text{Thus } E_{2000}(ENTZ) - E_{2000}(NENTZ) = [(1 + g + t^*)^{10} - (1 + g)^{10}] E_{1990}.$$

Now the median length of time a CA ENTZ, introduced in the 1990s, had been in existence on Jan 1 2000 is 90 months, so we estimate their employment effect as

$$\text{Actual diff } \{E_{2000}(ENTZ) - E_{2000}(NENTZ)\} = \left(\frac{90}{120}\right) [(1 + g + t^*)^{10} - (1 + g)^{10}] E_{1990}.$$

Let t_L^* and t_U^* denote the lower and upper bound of the 95% confidence interval for t^* . We then calculated the lower bound on the 95% confidence interval as

$$\text{Actual diff } \{E_{2000}(ENTZ) - E_{2000}(NENTZ)\}_L = \left(\frac{90}{120}\right) [(1 + g + t_L^*)^{10} - (1 + g)^{10}] E_{1990}$$

$$\text{and } \text{Actual diff } \{E_{2000}(ENTZ) - E_{2000}(NENTZ)\}_U = \left(\frac{90}{120}\right) [(1 + g + t_U^*)^{10} - (1 + g)^{10}] E_{1990},$$

assuming $g=0.03$ and using the 1990 California average census tract employment of $E_{1990} = 1697$. Note that we could have directly calculated the 95% confidence interval for

$$\text{Actual diff } \{E_{2000}(ENTZ) - E_{2000}(NENTZ)\} = \left(\frac{90}{120}\right) [(1 + g + t^*)^{10} - (1 + g)^{10}] E_{1990}$$

using the delta method, but this did not seem appropriate given that Neumark and Kolko only provide 1 significant digit for t^* .

2.2 Comparison to Bondonio and Engberg (2000) Impacts

In Table 7, column 1, Bondonio and Engberg estimate the parameters for the ENTZ effect as

$$\ln E_{it} = \alpha_o ENTZ_{it} + \alpha_1 ENTZ_{it} * \text{mon}_{it} + \dots$$

where $\ln E_{it}$ is log employment and mon_{it} is the monetary value of the ENTZ incentives in the relevant state. The policy effect in terms of the level of employment is

$$E_{1990}(\hat{\alpha}_o + \hat{\alpha}_1 * \text{mon}_{it}).$$

To calculate the 95% confidence interval for this effect in California, we substituted their mean value for $\text{mon}_{it} = .115$ and the 1990 California employment level per tract of $E_{1990} = 1697$ to obtain

$$(1697(\hat{\alpha}_o + \hat{\alpha}_1 * 0.015) \pm 2[\text{Var}(\hat{\alpha}_o) + \text{Var}(\hat{\alpha}_1) * \{0.015\}^2]^{1/2} 1697),$$

since we did not have an estimate for $\text{Cov}(\hat{\alpha}_o, \hat{\alpha}_1)$. We proceeded in exactly the same manner for NY state using its mean value of $\text{mon}_{it} = .115$ and $E_{1990} = 1357$.

2.3 Comparison to Elvery (2000) Impacts

We use the estimates in Table 4, columns (1) and (2). His outcome variables are the same as ours so the confidence intervals are straightforward to calculate.

**Online Appendix B – Empirical Results Allowing Overlap Between
ENTZs, EMPZs and ENTCs**

to

**Government Programs Can Improve Local Labor Markets: Evidence
from State Enterprise Zones, Federal Empowerment Zones and Federal
Enterprise Communities**

John C. Ham

University of Maryland, IZA and IRP (UW-Madison)

Charles Swenson

Marshall School of Business, University of Southern California

Ayşe İmrohoroğlu

Marshall School of Business, University of Southern California

Heonjae Song

Korea Institute of Public Finance

November 2008

Revised May 2010

Table B1: Summary Statistics for Enterprise Zones Analysis

		Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
1	ENTZ 1980	7.946*** (0.40)	17.14*** (1.35)	73.82*** (0.92)	35178*** (815)	1633*** (63.83)
2	ENTZ 1990	9.189*** (0.41)	27.19*** (1.82)	73.74*** (0.85)	42584*** (1337)	1820*** (66.65)
3	ENTZ 2000	8.011*** (0.51)	18.77*** (1.32)	74.83*** (0.75)	45130*** (1571)	1885*** (70.15)
4	Nearest NENTZ 1980	7.278*** (0.44)	13.42*** (1.62)	77.10*** (1.15)	39631*** (1282)	1603*** (79.94)
5	Nearest NENTZ 1990	7.587*** (0.38)	20.13*** (2.25)	76.83*** (0.82)	47987*** (2169)	1876*** (83.22)
6	Nearest NENTZ 2000	6.933*** (0.63)	14.41*** (1.63)	77.12*** (0.60)	52067*** (2619)	1975*** (88.97)
7	Contiguous NENTZ 1980	6.525*** (0.49)	12.02*** (1.17)	77.12*** (0.87)	40354*** (1004)	1704*** (77.41)
8	Contiguous NENTZ 1990	6.815*** (0.39)	16.87*** (2.26)	76.67*** (0.65)	51340*** (2722)	1970*** (74.43)
9	Contiguous NENTZ 2000	6.175*** (0.54)	12.23*** (1.19)	76.71*** (0.43)	56265*** (3416)	2104*** (83.73)
10	All NENTZ 1980	6.721*** (0.24)	11.17*** (0.56)	78.30*** (0.62)	43335*** (681)	1529*** (39.11)
11	All NENTZ 1990	6.704*** (0.32)	16.39*** (0.80)	77.99*** (0.56)	52823*** (1162)	1880*** (43.15)
12	All NENTZ 2000	6.629*** (0.33)	12.49*** (0.57)	77.78*** (0.43)	57358*** (1206)	2056*** (47.96)
13	E{ENTZ(Δ 00) - Nearest NENTZ(Δ 00)}	-0.537* (0.30)	-3.839*** (1.13)	1.015*** (0.37)	-1815** (887)	-55.16 (43.65)
14	E{ENTZ(Δ 90) - Nearest NENTZ(Δ 90)}	0.851*** (0.25)	4.998*** (1.08)	0.60 (0.50)	-2450*** (684)	-69.06** (30.50)
15	E{ENTZ(Δ 00) - Contiguous NENTZ(Δ 00)}	-0.549** (0.26)	-3.789*** (1.11)	1.071*** (0.36)	-1901*** (575)	-68.70* (38.97)
16	E{ENTZ(Δ 90) - Contiguous NENTZ(Δ 90)}	0.947*** (0.25)	5.231*** (1.02)	0.35 (0.49)	-3279*** (878)	-79.71*** (29.09)
17	E{ENTZ(Δ 00)} - E{All NENTZ(Δ 00)}	-0.16 (0.26)	-5.016*** (0.80)	1.537*** (0.44)	-2158*** (736)	-88.92*** (32.40)
18	E{ENTZ(Δ 90)} - E{All NENTZ(Δ 90)}	0.737*** (0.26)	5.786*** (0.86)	0.738* (0.45)	-4157*** (570)	-116.3*** (36.31)

Notes:

- Standard Errors in parentheses are adjusted for correlation across tracts in the same county. *** p<0.01, ** p<0.05, *p<0.1
- Δ 00: 2000-1990, Δ 90: 1990-1980
- Rows 17 and 18 are obtained by regression of outcomes on ENTZ dummy and state dummies.

Table B2. Estimates of the Average National Effects of Enterprise Zone Designation

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
ENTZ	-1.248*** (0.213)	-7.501*** (0.992)	0.799*** (0.288)	635.5 (386.6)	70.71** (32.5)
Comparison Group	All	Nearest	All	Nearest	Contiguous
Observations	24843	1313	25034	1292	1344
Number of ENTZs	1440	1313	1447	1292	1344
Number of Counties	534	112	541	112	112

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table B3. Estimates of the Average State Effects of Enterprise Zone Designation

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
ENTZ*California	-2.649*** (0.813)	-6.015** (3.015)	3.640*** (1.043)	3483** (1354)	0.62 (101.19)
ENTZ*Florida	-0.839 (1.035)	-6.923* (3.874)	2.197 (1.366)	1016 (1696)	188.87 (129.87)
ENTZ*Massachusetts	-2.410*** (0.354)	-15.209*** (1.386)	-0.580 (0.470)	17.39 (597)	-33.79 (78.20)
ENTZ*New York	-3.187 (0.781)	-7.457*** (2.888)	1.545 (1.034)	1161 (1283)	48.60 (93.96)
ENTZ*Ohio	0.094 (0.551)	-0.366 (2.032)	-0.318 (0.731)	1459 (896)	119.20* (64.20)
ENTZ*Oregon	2.799*** (1.027)	-5.461 (3.871)	5.339*** (1.318)	-2114 (1636)	159.88 (123.46)
ENTZ*Other states	-0.068 (0.684)	-3.007 (2.545)	0.940 (0.910)	293.76 (1133)	85.05 (75.18)
Comparison Group	Contiguous	Nearest	Contiguous	Nearest	Contiguous
Observations	1304	1313	1321	1292	1344
Number of ENTZs	1304	1313	1321	1292	1344
Number of Counties	112	112	112	112	112

See Notes to Table B2.

Table B4. IV Estimates of the Average National Effects of Enterprise Zone Designation

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
ENTZ	-22.48** (9.114)	-25.04*** (2.678)	17.14** (8.641)	2362* (1208.0)	-55.26 (75.2)
Comparison Group	All	Nearest	All	Nearest	Contiguous
Observations	24821	1256	24917	1264	1313
Number of ENTZs	1439	1256	1445	1264	1313
Number of Counties	534	114	535	114	116
First Stage Chi-Square Statistic	39.74	322.04	38.52	282.41	473.77

Notes:

Each outcome is instrumented by other outcomes in 1980. For example, in column (1) ENTZ is instrumented by poverty rate, fraction of households with wage and salary income, average wage and salary income, and employment in 1980. *** p<0.01, ** p<0.05, * p<0.1

Table B5. IV Estimates of the Average State Effects of Enterprise Zone Designation

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
ENTZ*California	-2.456** (1.156)	-9.547 (7.216)	6.232*** (2.173)	4083*** (1500)	19.01 (133.80)
ENTZ*Florida	-1.968** (0.872)	-13.91** (5.726)	3.709*** (1.410)	3648 (2628)	240.7*** (77.03)
ENTZ*Massachusetts	-3.984*** (1.173)	-21.67*** (2.785)	-1.539 (1.395)	665.50 (1191)	-134.60 (122.30)
ENTZ*New York	-3.252 (2.349)	-19.73** (9.344)	-3.046 (3.033)	4810 (4809)	87.82 (126.80)
ENTZ*Ohio	5.706 (4.376)	3.743 (17.710)	-1.999 (4.375)	9499* (5053)	129.70 (253.90)
ENTZ*Oregon	4.626*** (0.860)	-4.430 (6.382)	6.083*** (1.898)	-2125** (1010)	391.9*** (109.30)
ENTZ*Other states	0.661 (1.119)	-15.52** (6.929)	0.674 (1.102)	-647.60 (2185)	90.66 (112.00)
Comparison Group	Contiguous	Nearest	Contiguous	Nearest	Contiguous
Observations	1303	1262	1321	1270	1322
Number of ENTZs	1303	1262	1321	1270	1322
Number of Counties	116	114	116	114	116
First Stage Chi-Square Statistic					
California	90.80	66.51	110.32	60.07	109.95
Florida	98.19	33.65	94.80	44.44	72.50
Massachusetts	468.69	490.49	447.31	286.27	458.30
New York	34.38	17.31	34.78	13.21	35.35
Ohio	7.15	3.52	4.00	6.90	7.02
Oregon	36.87	60.04	48.63	62.63	25.48
Other states	56.42	38.97	40.07	34.48	48.10

See Notes to Table B4.

Table B6. Average National Effects of Enterprise Zone Designation After Excluding the Nearest Non-Enterprise Zone

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
ENTZ	-1.544*** (0.251)	-7.228*** (1.646)	0.914*** (0.343)	1506*** (406.0)	34.35 (32.8)
Comparison Group	All	Contiguous	All	Contiguous	All
Observations	22582	857	22754	862	22955
Number of ENTZs	949	857	954	862	960
Number of Counties	490	100	496	100	514

See Notes to Table B2.

Table B7. Average State Effects of Enterprise Zone Designation After Excluding the Nearest Non-Enterprise Zone

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
ENTZ*California	-3.271*** (0.829)	-3.049 (3.993)	1.541 (1.070)	3133*** (1167)	-53.63 (99.50)
ENTZ*Florida	-2.143* (1.115)	-18.664*** (5.391)	5.122*** (1.471)	883 (1604)	162.20 (135.41)
ENTZ*Massachusetts	-2.827*** (0.452)	-13.011*** (3.427)	-0.058 (0.603)	3389*** (657)	128.37 (84.28)
ENTZ*New York	-1.585* (0.829)	-6.591* (3.912)	0.046 (1.098)	388 (1191)	-97.00 (99.07)
ENTZ*Ohio	0.714 (0.642)	1.740 (2.905)	0.429 (0.855)	-1235 (932)	-44.23 (73.61)
ENTZ*Oregon	0.135 (1.210)	-10.261* (5.400)	7.742*** (1.612)	2660 (1757)	53.58 (136.93)
ENTZ*Other states	0.336 (0.902)	-13.675*** (3.971)	2.366** (1.201)	-1488 (1310)	-18.36 (100.88)
Comparison Group	Contiguous	Contiguous	Contiguous	Contiguous	Contiguous
Observations	853	857	860	862	864
Number of ENTZs	853	857	860	862	864
Number of Counties	100	100	100	100	100

See Notes to Table B2.

Table B8: Summary Statistics for Empowerment Zones Analysis

		Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
1	EMPZ 1980	17.66*** (1.69)	40.42*** (1.78)	58.21*** (1.96)	27916*** (932)	906.8*** (97.77)
2	EMPZ 1990	23.06*** (2.55)	60.01*** (3.35)	57.25*** (2.24)	30160*** (1461)	782.9*** (129)
3	EMPZ 2000	20.32*** (1.08)	38.74*** (0.97)	64.26*** (1.26)	35225*** (1611)	761.1*** (118)
4	Nearest NEMPZ 1980	15.68*** (1.35)	34.27*** (1.85)	63.97*** (1.63)	31167*** (1424)	1080*** (116)
5	Nearest NEMPZ 1990	18.53*** (1.77)	50.64*** (3.41)	63.67*** (2.04)	35169*** (1683)	1067*** (161)
6	Nearest NEMPZ 2000	19.02*** (1.22)	33.93*** (1.44)	68.75*** (1.39)	38233*** (2101)	987.3*** (148)
7	Contiguous NEMPZ 1980	15.30*** (1.10)	34.46*** (1.61)	63.15*** (1.84)	31284*** (1511)	1137*** (114)
8	Contiguous NEMPZ 1990	17.64*** (1.40)	50.40*** (2.66)	62.38*** (2.33)	35683*** (1305)	1081*** (154)
9	Contiguous NEMPZ 2000	17.92*** (0.99)	33.86*** (1.33)	68.07*** (1.39)	38316*** (1883)	1002*** (143)
10	All NEMPZ 1980	7.037*** (0.30)	10.88*** (0.52)	79.84*** (0.60)	45285*** (685)	1553*** (36.6)
11	All NEMPZ 1990	7.052*** (0.28)	16.62*** (0.76)	79.12*** (0.52)	54584*** (1053)	1872*** (40.9)
12	All NEMPZ 2000	6.836*** (0.28)	12.62*** (0.54)	78.77*** (0.41)	58933*** (1166)	2017*** (45.5)
13	E{EMPZ(Δ 00) - Nearest NEMPZ(Δ 00)}	-3.090** 1.109	-4.714*** 1.491	1.04 1.37	2127** 814.7	56.72 34.19
14	E{EMPZ(Δ 90) - Nearest NEMPZ(Δ 90)}	2.933*** 0.712	3.889*** 1.018	-0.374 0.518	-1931*** 549.1	-97.90*** 31.84
15	E{EMPZ(Δ 00) - Contiguous NEMPZ(Δ 00)}	-3.136** (1.34)	-4.739** (1.66)	1.30 (1.33)	2457*** (817)	56.64* (27.6)
16	E{EMPZ(Δ 90) - Contiguous NEMPZ(Δ 90)}	3.173*** (0.61)	3.623*** (1.09)	-0.20 (0.55)	-2174*** (513)	-68.07** (23.4)
17	E{EMPZ(Δ 00)} - E{All NEMPZ(Δ 00)}	-2.17 (2.20)	-15.66*** (3.50)	7.184*** (2.03)	600 (1324)	-174.0*** (56.7)
18	E{EMPZ(Δ 90)} - E{All NEMPZ(Δ 90)}	5.583*** (1.34)	12.83*** (2.64)	-0.36 (1.35)	-6892*** (1539)	-422.4*** (41.6)

Notes:

- Standard Errors in parentheses are adjusted for correlation across tracts in the same county. *** p<0.01, ** p<0.05, *p<0.1
- Δ 00: 2000-1990, Δ 90: 1990-1980
- Rows 17 and 18 are obtained by regression of outcomes on EMPZ dummy.

Table B9: Summary Statistics for Enterprise Communities Analysis

		Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
1	ENTC 1980	12.22*** (0.57)	31.74*** (0.95)	68.37*** (1.08)	26946*** (409)	1142*** (56.6)
2	ENTC 1990	15.24*** (0.47)	55.86*** (1.33)	66.21*** (0.93)	27861*** (579)	1064*** (50.5)
3	ENTC 2000	14.78*** (0.49)	34.69*** (0.95)	70.28*** (0.98)	31812*** (608)	1040*** (54.8)
4	Nearest NENTC 1980	8.889*** (0.44)	21.21*** (0.91)	72.41*** (0.84)	31739*** (532)	1333*** (54.1)
5	Nearest NENTC 1990	9.805*** (0.45)	34.52*** (1.68)	72.53*** (0.76)	34863*** (736)	1368*** (61.9)
6	Nearest NENTC 2000	10.91*** (0.62)	23.56*** (1.09)	74.89*** (0.58)	38621*** (868)	1397*** (72.7)
7	Contiguous NENTC 1980	8.683*** (0.45)	20.51*** (0.69)	72.71*** (0.89)	32054*** (396)	1397*** (55.3)
8	Contiguous NENTC 1990	9.431*** (0.37)	33.82*** (1.49)	73.40*** (0.81)	35568*** (668)	1437*** (60.9)
9	Contiguous NENTC 2000	10.36*** (0.56)	22.60*** (0.91)	75.24*** (0.77)	39605*** (856)	1453*** (67.6)
10	All NENTC 1980	6.451*** (0.17)	10.30*** (0.38)	79.55*** (0.46)	44035*** (549)	1498*** (31.5)
11	All NENTC 1990	6.319*** (0.19)	15.53*** (0.52)	78.90*** (0.39)	52284*** (884)	1865*** (31.6)
12	All NENTC 2000	6.053*** (0.22)	11.46*** (0.42)	78.56*** (0.32)	57189*** (938)	2093*** (34.6)
13	E{ENTC(Δ 00) - Nearest NENTC(Δ 00)}	-2.032** (0.84)	-9.727*** (1.39)	1.882*** (0.44)	232 (507)	-27 (16.8)
14	E{ENTC(Δ 90) - Nearest NENTC(Δ 90)}	2.216*** (0.38)	10.09*** (1.38)	-2.683*** (0.53)	-2387*** (409)	-119.5*** (24.4)
15	E{ENTC(Δ 00) - Contiguous NENTC(Δ 00)}	-1.336** (0.65)	-9.755*** (1.26)	2.179*** (0.42)	-40 (492)	-40.36** (15.9)
16	E{ENTC(Δ 90) - Contiguous NENTC(Δ 90)}	2.273*** (0.37)	10.50*** (1.18)	-2.839*** (0.46)	-2356*** (332)	-118.0*** (24.3)
17	E{ENTC(Δ 00)} - E{All NENTC(Δ 00)}	-0.01 (0.53)	-16.74*** (1.13)	4.216*** (0.53)	-762 (616)	-253.9*** (32.4)
18	E{ENTC(Δ 90)} - E{All NENTC(Δ 90)}	3.047*** (0.53)	18.04*** (1.28)	-1.414** (0.56)	-6859*** (641)	-434.8*** (34.6)

Notes:

- Standard Errors in parentheses are adjusted for correlation across tracts in the same county. *** p<0.01, ** p<0.05, *p<0.1
- Δ 00: 2000-1990, Δ 90: 1990-1980
- Rows 17 and 18 are obtained by regression of outcomes on ENTC dummy.

Table B10. Estimates of the Average National Effects of Empowerment Zone Designation

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
EMPZ	-7.507*** (0.42)	-8.256*** (2.55)	1.514 (1.15)	4631*** (1101)	187.0*** (53.6)
Comparison Group	All	Contiguous	Contiguous	Contiguous	All
Observations	24352	296	291	295	24769
Number of EMPZs	285	296	291	295	293
Number of Counties	424	16	16	16	455

See Notes to Table B2.

Table B11. IV Estimates of the Average National Effects of Empowerment Zone Designation

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
EMPZ	-47.81*** (1.69)	-17.13*** (4.839)	9.972*** (1.950)	7530* (4016)	1224*** (188.5)
Comparison Group	All	Contiguous	Contiguous	Contiguous	All
Observations	24332	267	266	269	24504
Number of EMPZs	284	267	266	269	289
Number of Counties	424	13	13	13	424
First Stage Chi-Square Statistic	12.16	92.57	94.29	80.07	14.55

See Notes to Table B4.

Table B12. Average National Effects of Empowerment Zone After Excluding the Nearest Non-Empowerment Zone

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
EMPZ	-2.714 (1.73)	-8.887*** (3.25)	1.021 (2.00)	3425* (1859)	117.5** (46.8)
Comparison Group	Contiguous	Contiguous	Contiguous	2nd Nearest	2nd Nearest
Observations	138	143	139	140	145
Number of EMPZs	138	143	139	140	145
Number of Counties	15	15	15	15	15

See Notes to Table B2.

Table B13. Estimates of the Average National Effects of Enterprise Community Designation

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
ENTC	-2.895*** (0.30)	-19.77*** (1.66)	5.046*** (0.44)	2316*** (542)	16.3 (73.53)
Comparison Group	All	Contiguous	All	Contiguous	Contiguous
Observations	34767	455	35125	484	490
Number of ENTCS	513	455	519	484	490
Number of Counties	1014	69	1039	71	71

See Notes to Table B2.

Table B14. IV Estimates of the Average National Effects of Enterprise Community Designation

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
ENTC	-19.72*** (6.982)	-20.12*** (3.469)	11.78 (7.622)	1198 (1206)	82.36*** (30.5)
Comparison Group	All	Contiguous	All	Contiguous	Contiguous
Observations	34737	448	34861	480	480
Number of ENTCS	511	448	517	480	480
Number of Counties	1014	69	1014	71	71
First Stage Chi-Square Statistic	40.23	440.81	19.80	437.37	494.72

See Notes to Table B4.

Table B15. Average National Effects of Enterprise Community After Excluding the Nearest Non-Enterprise Community

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
ENTC	-2.926*** (0.30)	-23.13*** (2.92)	4.720*** (1.11)	2008** (859)	-14.39 (93.23)
Comparison Group	All	Contiguous	2nd Nearest	Contiguous	Contiguous
Observations	28853	235	231	247	247
Number of ENTCS	495	235	231	247	247
Number of Counties	881	64	64	65	65

See Notes to Table B2.

Online Appendix C – Replicating Main Empirical Results
Using OLS and Clustered Standard Errors
to
Government Programs Can Improve Local Labor Markets: Evidence
from State Enterprise Zones, Federal Empowerment Zones and Federal
Enterprise Communities

John C. Ham

University of Maryland, IZA and IRP (UW-Madison)

Charles Swenson

Marshall School of Business, University of Southern California

Ayşe İmrohoroğlu

Marshall School of Business, University of Southern California

Heonjae Song

Korea Institute of Public Finance

November 2008

Revised May 2010

Table C1. OLS Estimates of the Average National Effects of Enterprise Zone Designation with Clustering

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
ENTZ	-1.576*** (0.482)	-8.742*** (2.258)	0.222 (0.439)	702.5 (793.1)	12.26 (51.6)
Comparison Group	Nearest	Nearest	Nearest	Nearest	Nearest
Observations	1221	1245	1234	1219	1264
Number of ENTZs	1221	1245	1234	1219	1264
Number of Counties	111	112	111	112	112

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table C2. OLS Estimates of the Average National Effects of Empowerment Zone Designation with Clustering

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
EMPZ	-6.906*** (1.48)	-9.213*** (2.59)	1.58 (1.84)	4,467*** (1131)	174.6*** (50.8)
Comparison Group	Nearest	Nearest	Nearest	Nearest	Nearest
Observations	260	267	264	262	268
Number of EMPZs	260	267	264	262	268
Number of Counties	14	14	14	14	14

See Notes to Table C1.

Table C3. OLS Estimates of the Average National Effects of Enterprise Community Designation with Clustering

	Unemployment Rate (%)	Poverty Rate (%)	Fraction of Households with Wage and Salary Income (%)	Average Wage and Salary Income (\$2000)	Employment
ENTC	-3.695*** (1.16)	-20.04*** (3.06)	4.052*** (0.92)	3,522*** (698)	59.71* (30.53)
Comparison Group	Nearest	Nearest	Nearest	Nearest	Nearest
Observations	357	340	372	358	376
Number of ENTCs	357	340	372	358	376
Number of Counties	58	57	59	58	59

See Notes to Table C1.