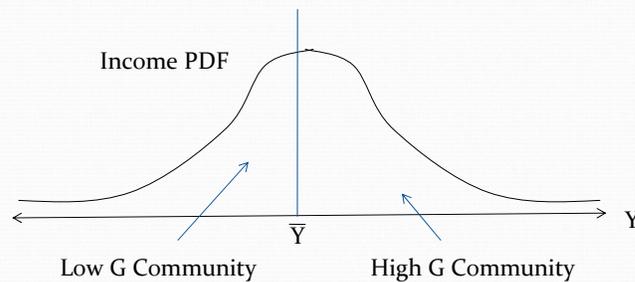


The Impact of TRI on Population Scale & Composition

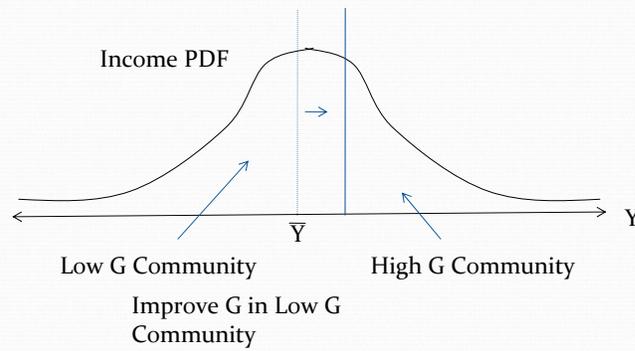
Randall Walsh – University of Colorado & NBER

Spencer Banzhaf – Georgia State University & NBER

A Simple Model of Scale & Income Effects W/O Demographic Preferences

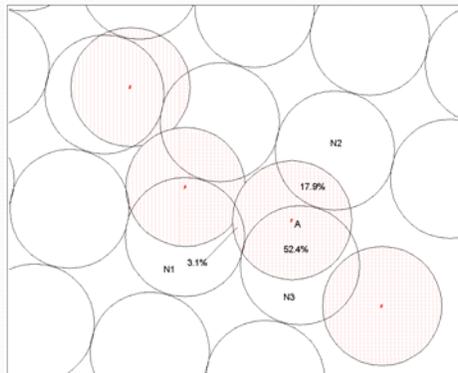


A Simple Model of Scale & Income Effects W/O Demographic Preferences



- Scale Effects +
- Income Effects ?

Defining Communities and Attaching TRI Data



Scale Effects

	Plant Dummies Alone	Plant Dummies with Unweighted Emissions	Plant Dummies with Hazard-weighted Emissions
Effect on 1990-2000 Pct Change in Population of...			
...1990 Emissions	-8.3 ***	-9.8 ***	-12.0 ***
...Increases in emissions	-9.4 **	-9.4 **	-9.4 **
...Decreases in emissions	5.1 **	5.3 *	6.3 **
R2	0.19	0.19	0.19
F-test of emissions conditional on plant dummies (p-val)	N/A	.44	.07

All Models have zip-code fixed effects and control for 1990 demographic composition.

Income Effects

	Plant Dummies Alone	Plant Dummies with Unweighted Emissions	Plant Dummies with Hazard-weighted Emissions
Effect on 1990-2000 Change in Mean Income of...			
...1990 Emissions	-2,752 ***	-5,384 ***	-2,194 **
...Increases in emissions	-189	-184	-189
...Decreases in emissions	1,671 **	2,653 ***	1,416 *
R2	0.50	0.50	0.50
F-test of emissions conditional on plant dummies (p-val)	N/A	<0.01	0.79

All Models have zip-code fixed effects and control for 1990 demographic composition.

When Tastes for Demographics are Added

- Income Sorting with Large Differences in Environmental Quality
- Racial Sorting with Small Differences in Environmental Quality
- With Targeted Interventions, Tipping Between the Two Can Occur
 - Increase Correlations Between Env. Q. & Race
 - Decrease Correlations Between Env. Q. & Income

Implications for Cross-Section Vs. Diff-n-Diff

- In Model 2, Cross-Section EJ story holds under both income sorting and racial sorting (with F.O.S.D.).
 - Negative correlation between pct. minority and environmental quality.
- With targeted intervention Correlation between pct. minority and public goods increases.
- Diff-in-Diff finds positive correlation between change in environmental quality and change in pct. minority.
- Could yield incorrect inference with Diff-in-Diff.

Change in Relationships arising from 1990-2000 Reductions in TRI Emissions In California

Outcome/Spatial controls	β_{2000}	β_{1990}	$\Delta\beta$
Mean Income (1990\$)			
Latitude, Dist Coast	-19.563*** (534)	-20.059*** (403)	496 (623)
School Dist dummies	-15.168*** 0	-16.407*** (443)	1,239** (631)
Zip Code dummies	-6.444*** (423)	-7.707*** (351)	1,263** (510)
Community FE	238 (480)	-1,259*** (368)	1,498*** (399)
Pct Minority (pct points)			
Latitude, Dist Coast	29.22*** (0.82)	16.31*** (0.63)	12.91*** (1.01)
School Dist dummies	18.99*** (0.66)	6.71*** (0.55)	12.29*** (0.82)
Zip Code dummies	11.49*** (0.58)	-0.76* (0.46)	11.49*** (0.58)
Community FE	2.95*** (0.67)	-9.26*** (0.46)	12.21*** (0.52)

Conclusions

- Both Scale and Composition Responses to Changes in TRI in California.
 - Its not clear what is driving these responses.
 - Need to map “Facts on the Ground” to risk perceptions
- Interactions between race and public goods are potentially confounding forces.