Bright Minds, Big Rent: Gentrification and the Rising Returns to Skill

Presentation prepared for Philadelphia Fed Research Symposium May 25, 2016

Lena Edlund, Cecilia Machado, Maria Sviatschi

Wealthy New Yorkers say goodbye to suburbs, hello to city

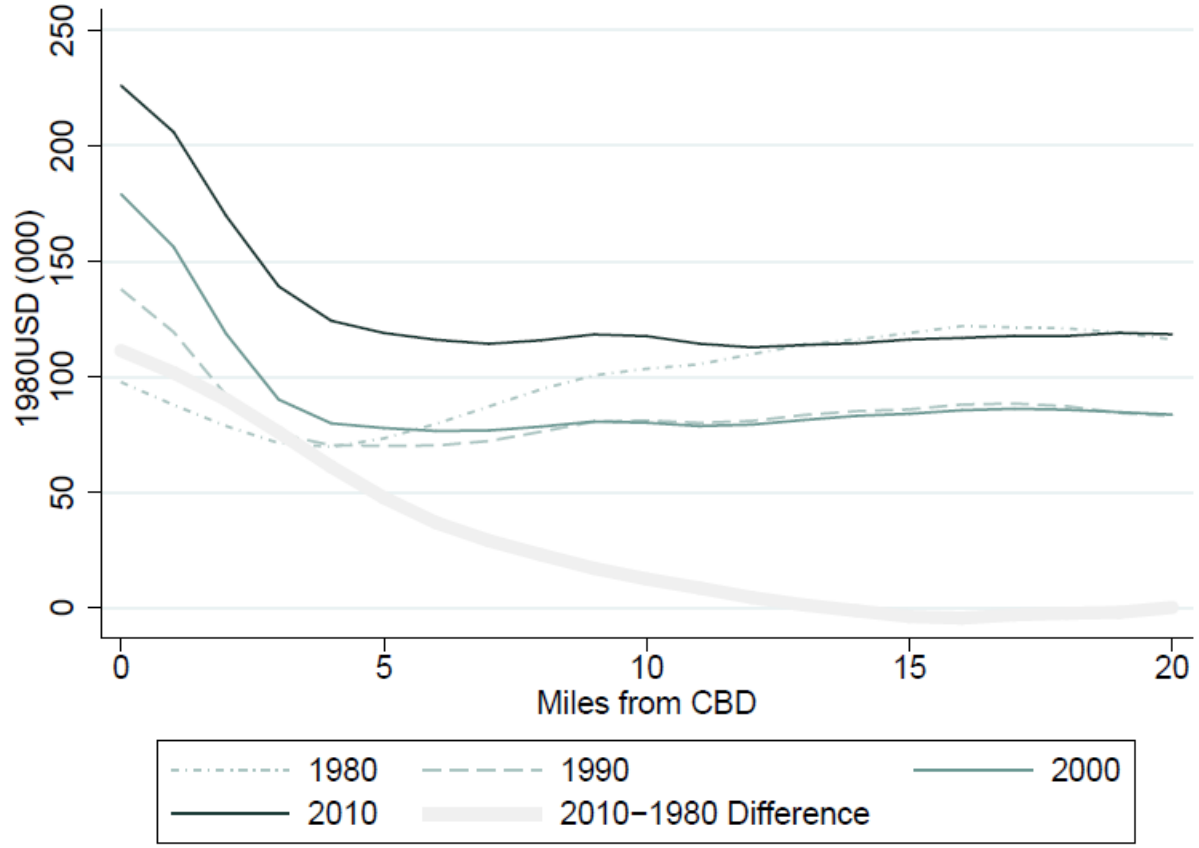
By Jennifer Gould Keil

May 11, 2015 | 4:18am

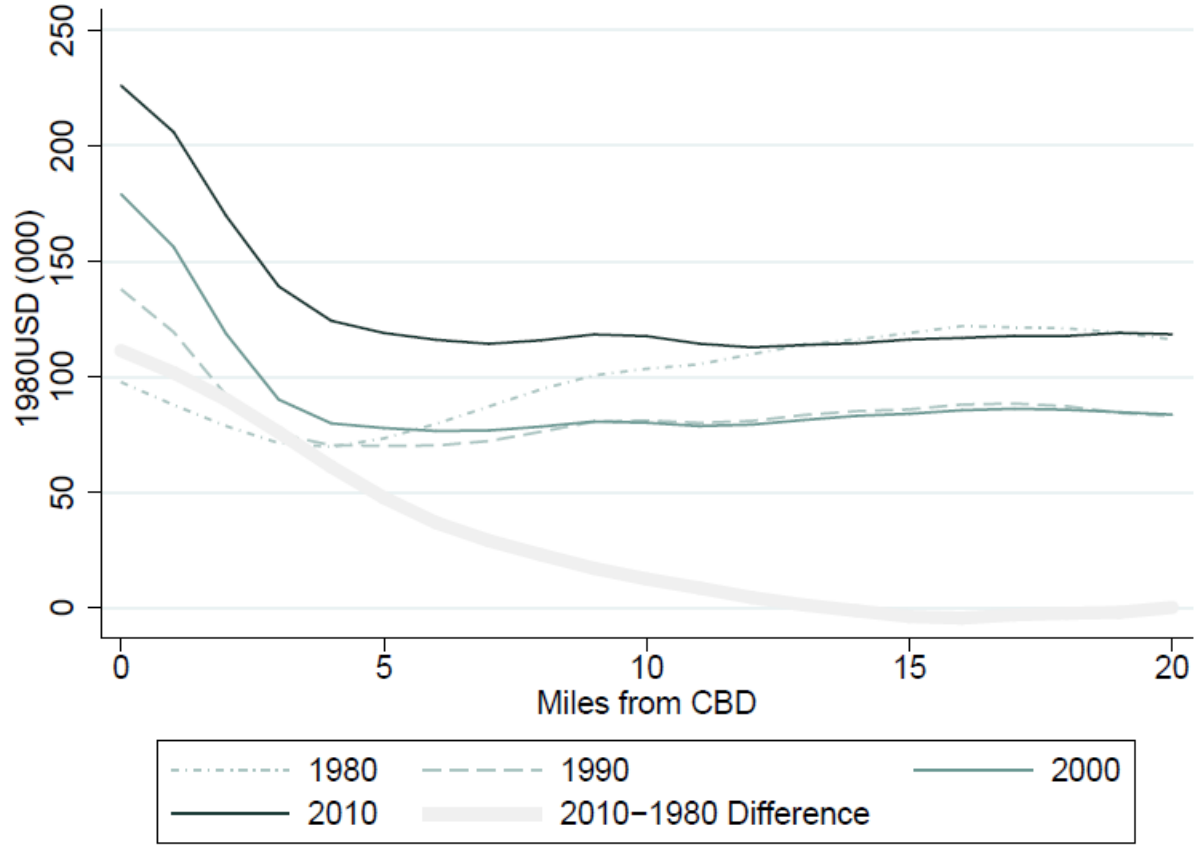
Photo: Shutterstock

Wealthy New Yorkers are no longer fleeing Manhattan for the sprawling estates of Westchester — in fact, the bucolic burbs have become a tough sell, with buyers instead plunking down their millions on mansions in the sky.

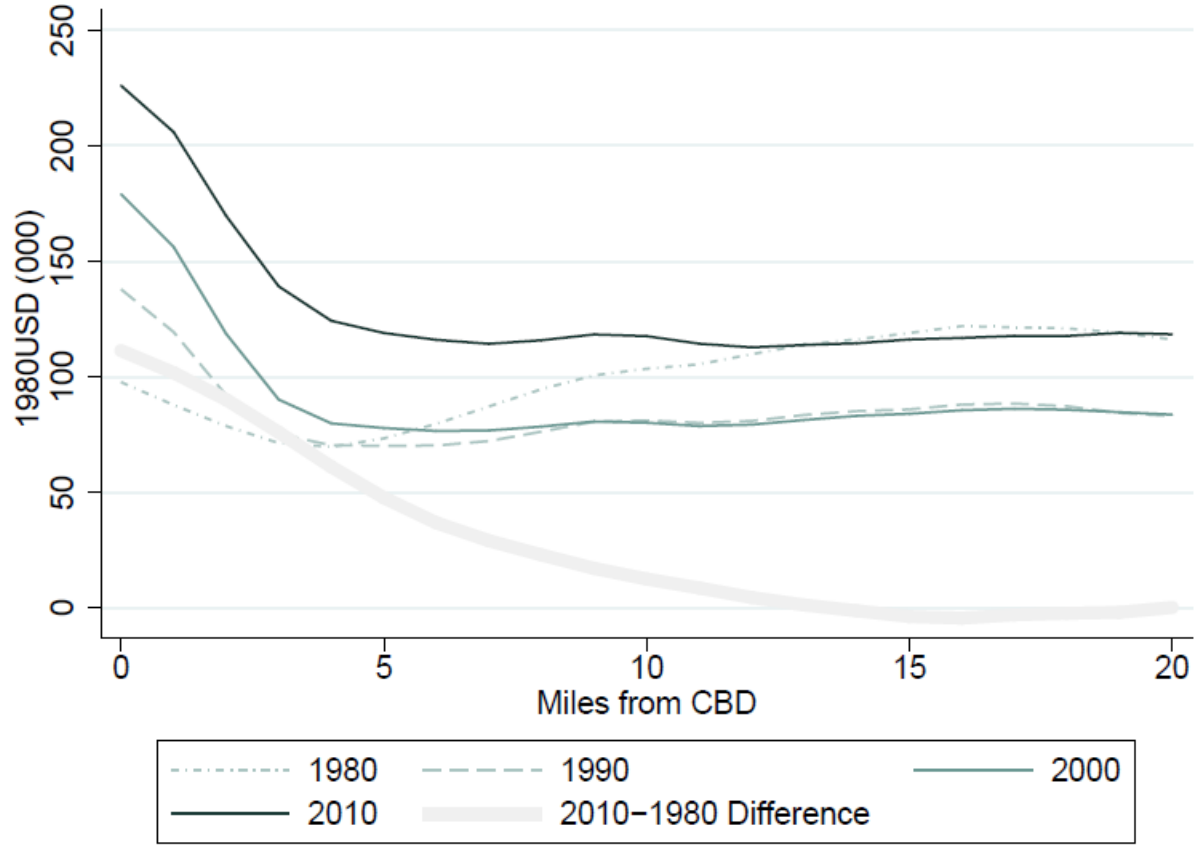
2-3Bdrm Home, ‘000 1980$



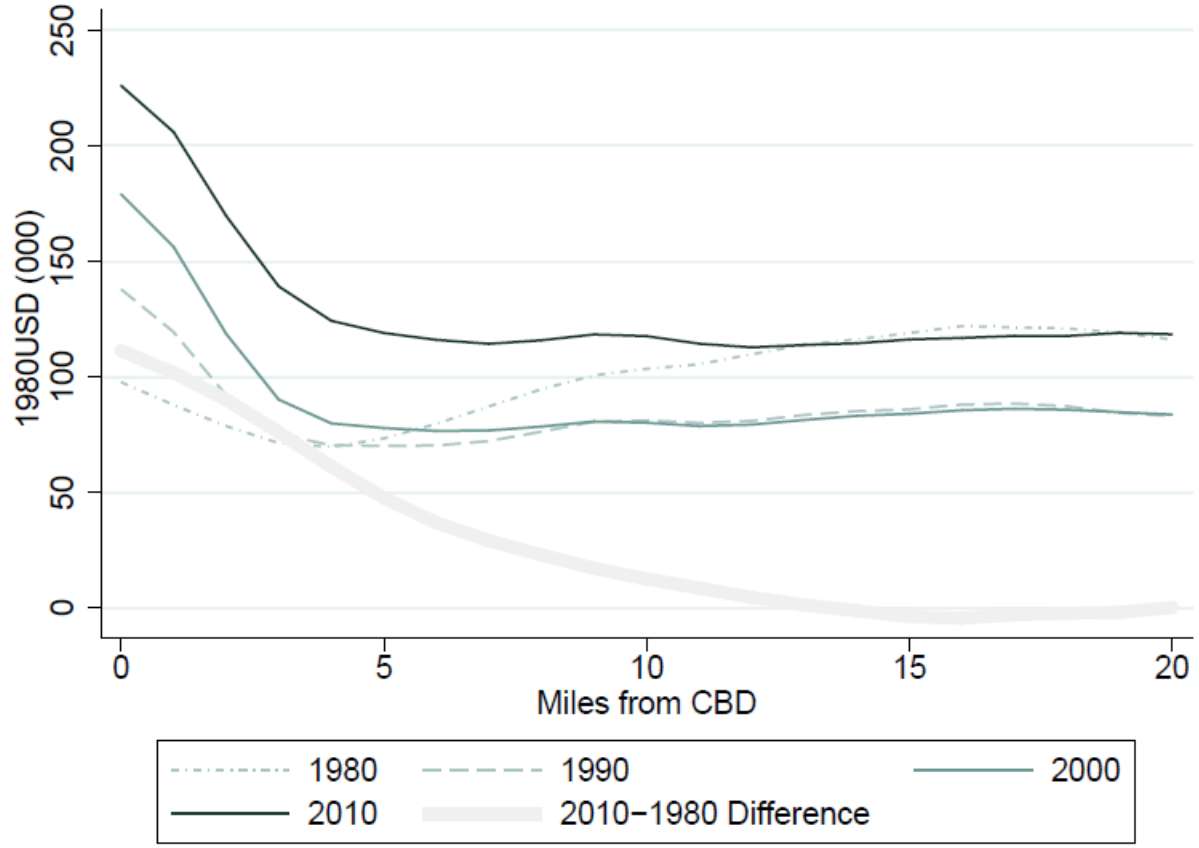
2-3Bdrm Home, ‘000 1980$



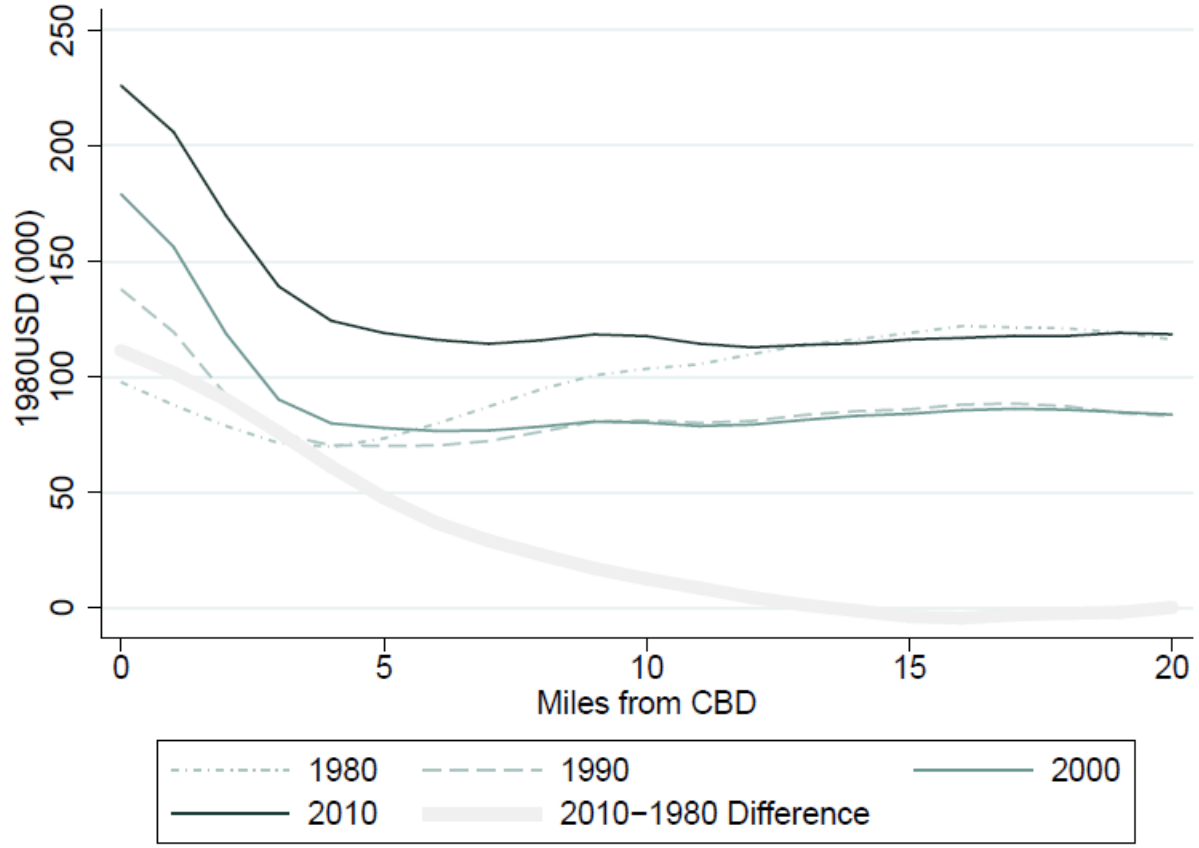
2-3Bdrm Home, ‘000 1980$



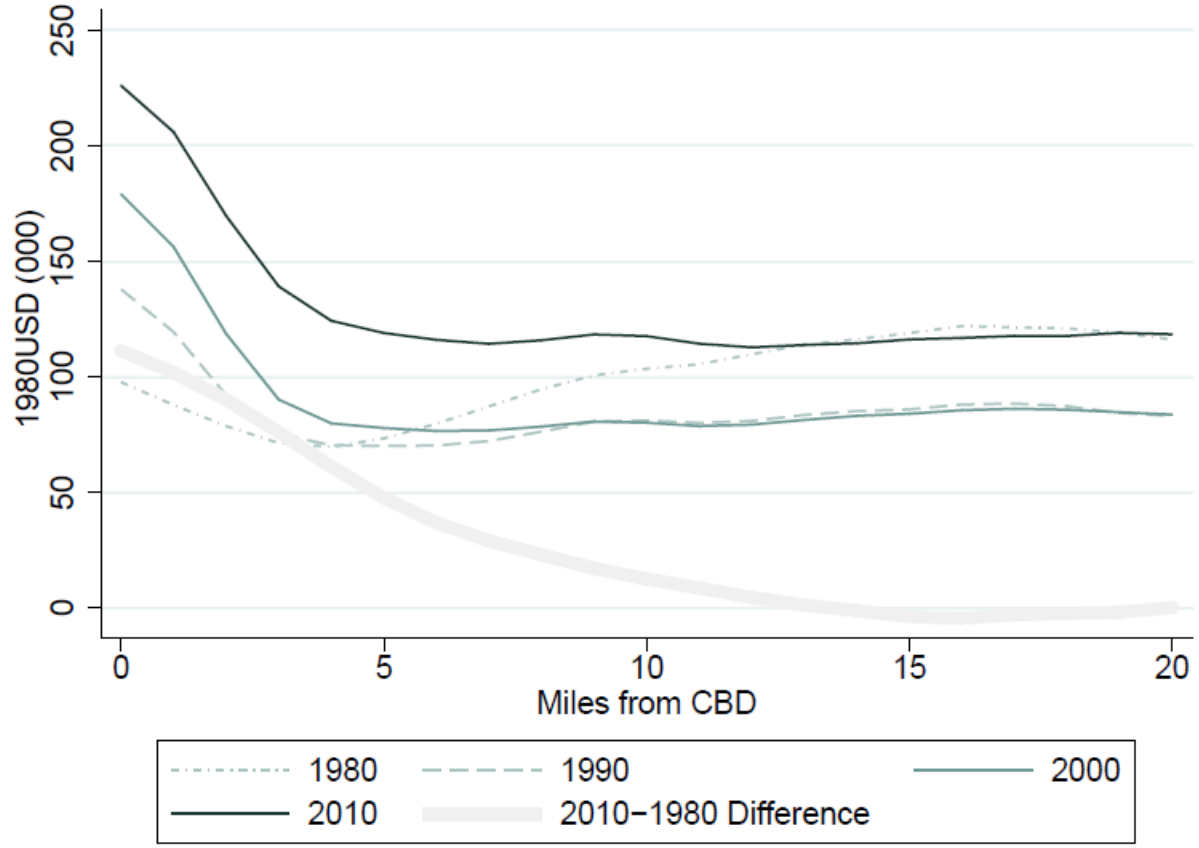
2-3Bdrm Home, ‘000 1980$



2-3Bdrm Home, ‘000 1980$



2-3Bdrm Home, ‘000 1980$



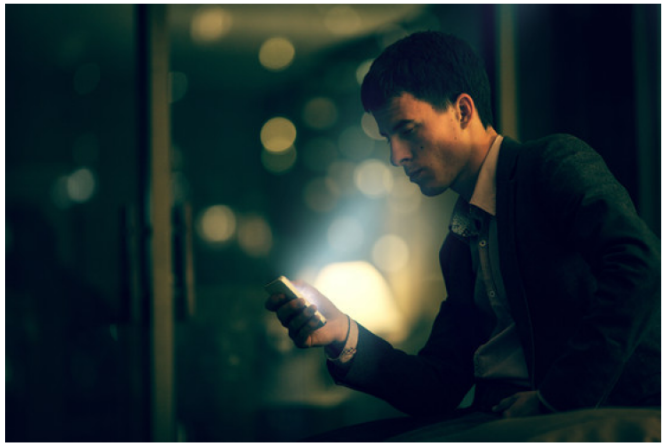
Hypothesis

THE WALL STREET JOURNAL.
WSJ.com

May 5, 2015, 12:02 AM ET

The 40-Hour Work Week Is a Thing of the Past

ByRachel Feintzeig



Getty Images

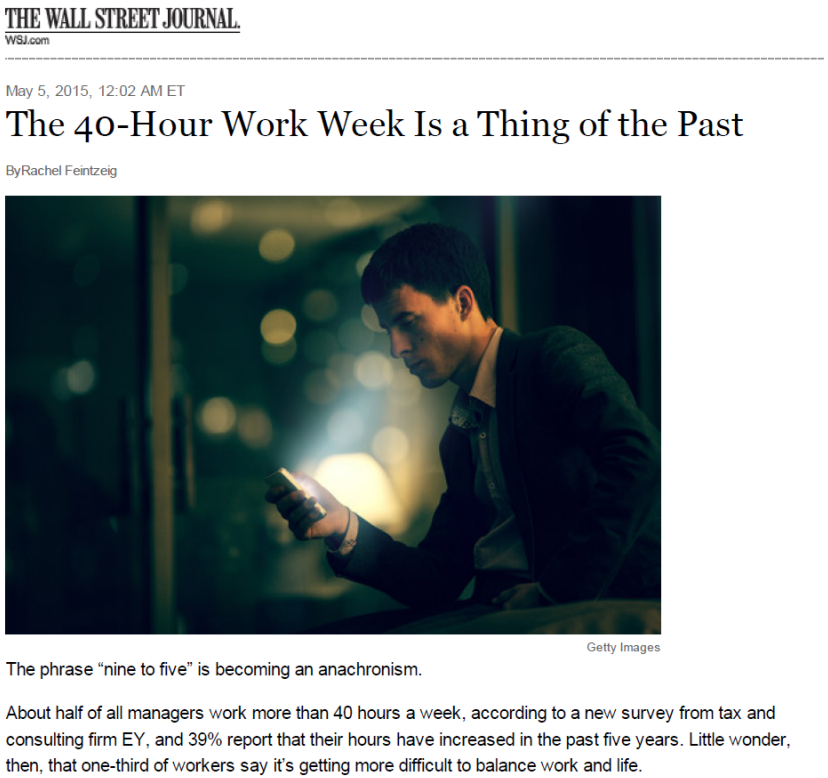
The phrase “nine to five” is becoming an anachronism.

About half of all managers work more than 40 hours a week, according to a new survey from tax and consulting firm EY, and 39% report that their hours have increased in the past five years. Little wonder, then, that one-third of workers say it’s getting more difficult to balance work and life.

Hypothesis

- Adults in high income households work more
  - More dual earner households
  - More singles
  - Longer work week

➔ Cut down on commute



THE WALL STREET JOURNAL.
WSJ.com

May 5, 2015, 12:02 AM ET

The 40-Hour Work Week Is a Thing of the Past

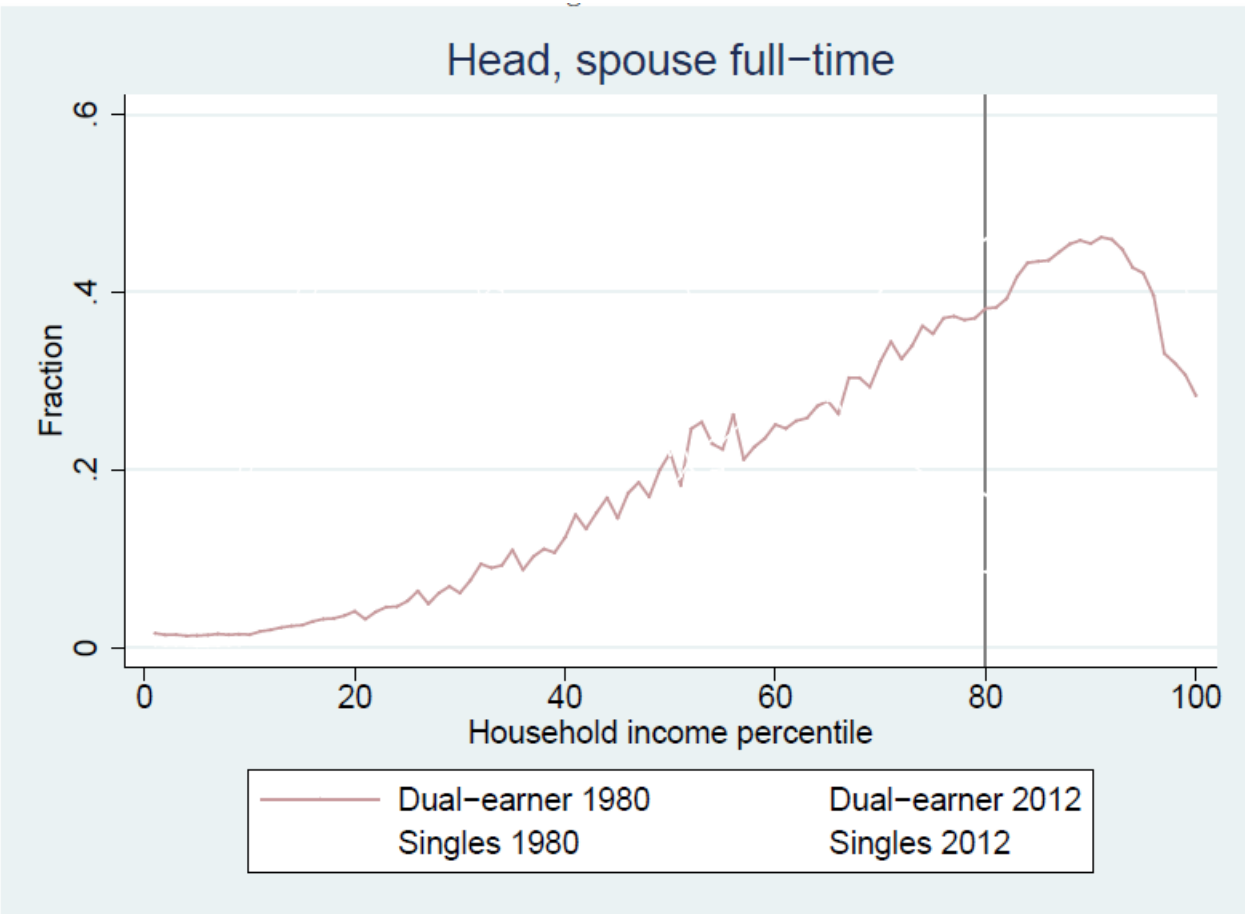
ByRachel Feintzeig

Getty Images

The phrase “nine to five” is becoming an anachronism.

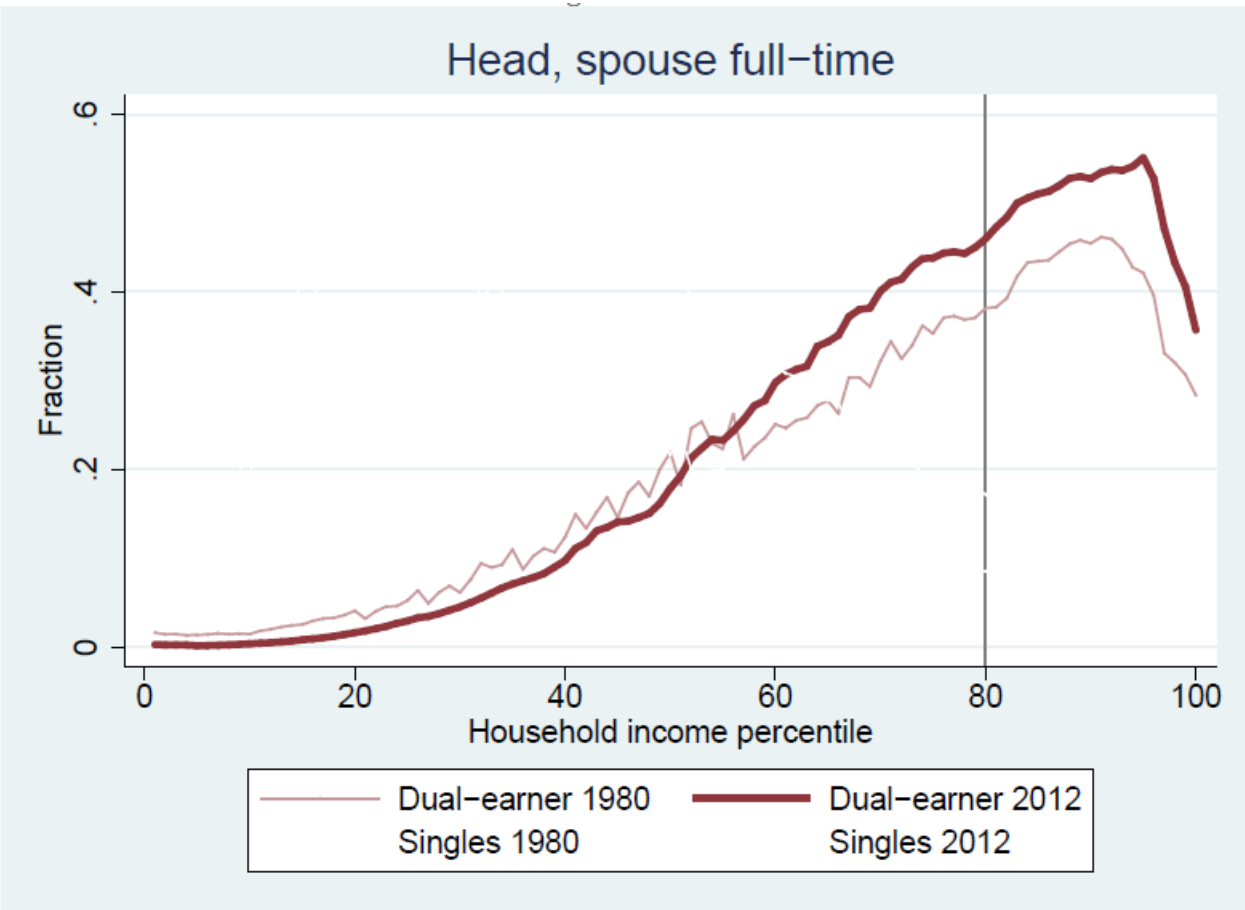
About half of all managers work more than 40 hours a week, according to a new survey from tax and consulting firm EY, and 39% report that their hours have increased in the past five years. Little wonder, then, that one-third of workers say it’s getting more difficult to balance work and life.

Head, Spouse both full time 1980



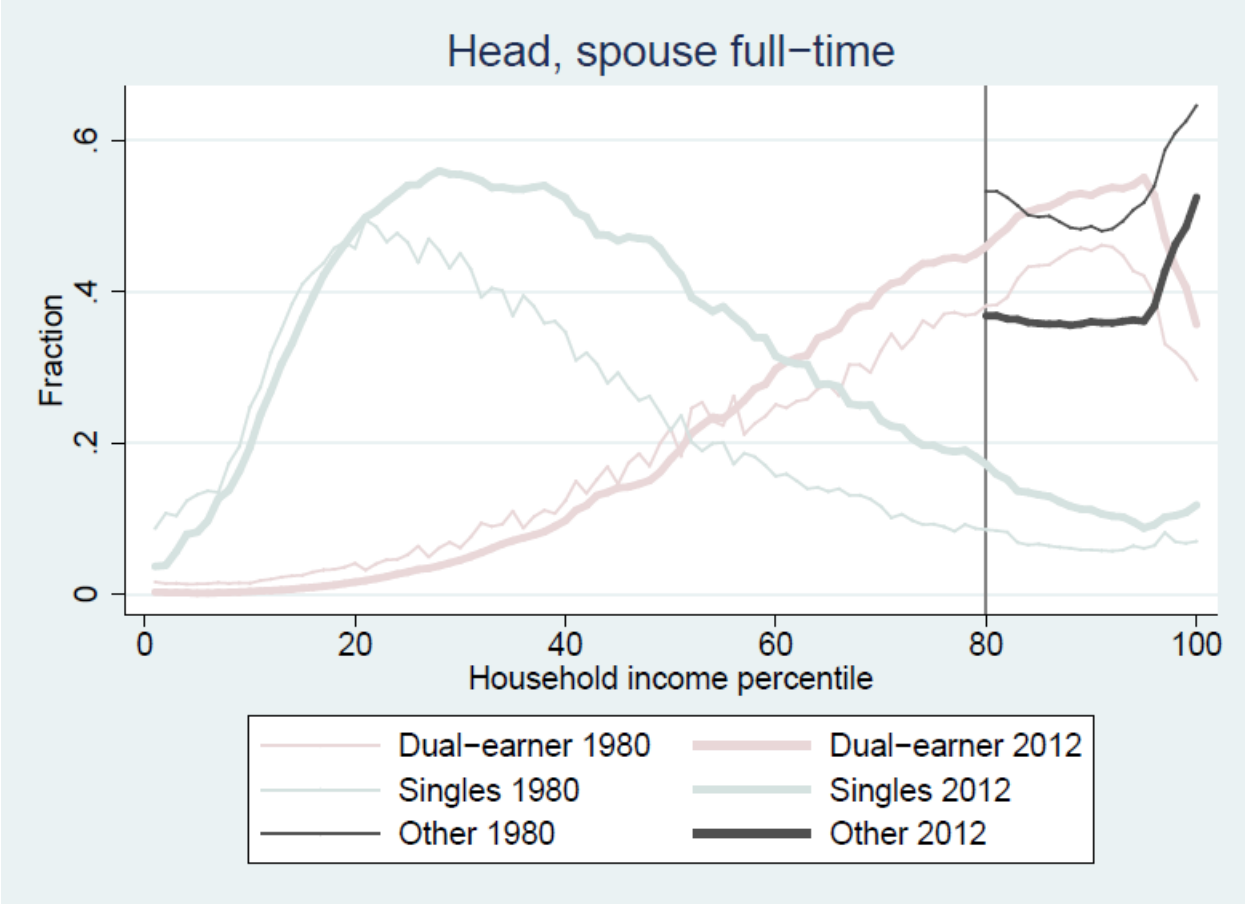
Source: authors calculations, IPUMS

Head, Spouse both full time 2012



Source: authors calculations, IPUMS

Households w/ at least 1 head/spouse NOT working full time



Source: authors calculations, IPUMS

40h+
Adults 25-55

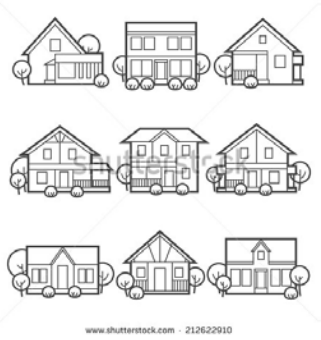
Note: Ages 25-55.
Source: Decennial censuses, integrated public use micro data series (IPUMS).

EMS 2015, NBER WP 21729

Model

Model

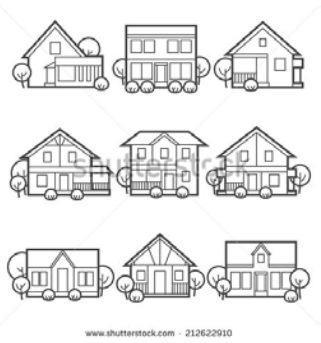

www.shutterstock.com · 94690486


www.shutterstock.com · 212622910

Model

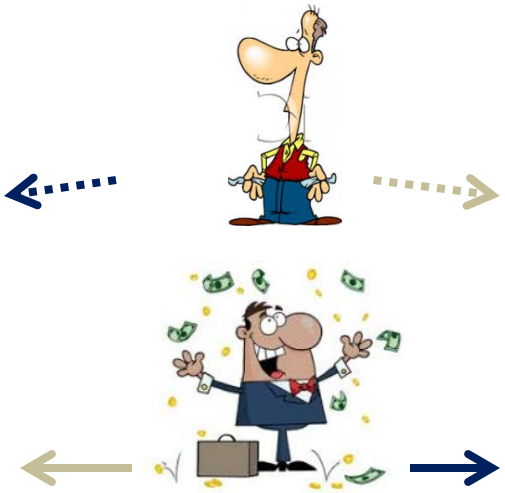
Distance to CBD

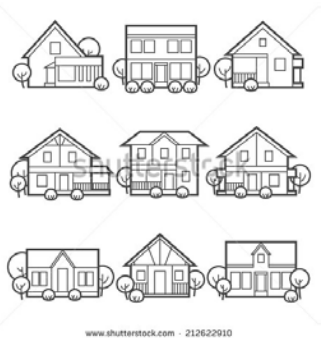
Model



Distance to CBD

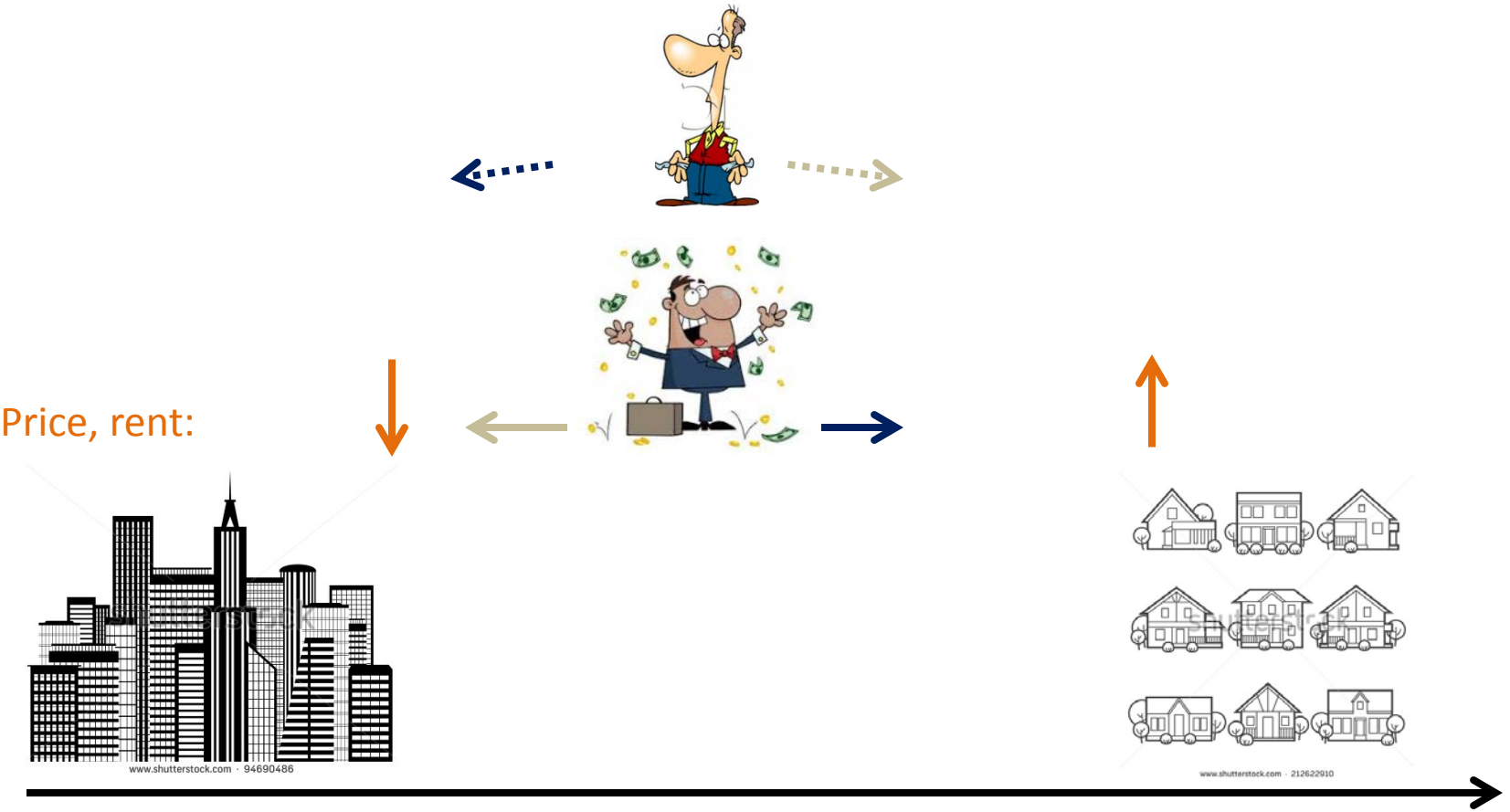
Model





Distance to CBD

Model



Model

Price, rent:

Distance to CBD

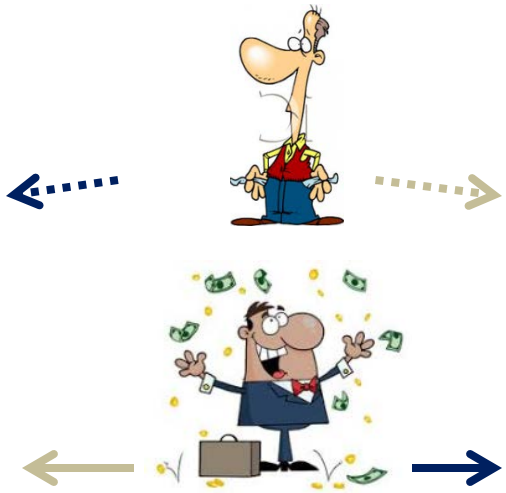
Model

Small house
Short commute

Little time at home
~
Long hours

Large house
Long commute

Time at home
~
Short hours



Price, rent:

Distance to CBD

Model

Small house
Short commute

Little time at home
~
Long hours

Large house
Long commute

Time at home
~
Short hours

Price, rent:

Distance to CBD

Model

Small house
Short commute

Little time at home
~
Long hours

Large house
Long commute

Time at home
~
Short hours

Price, rent:

Distance to CBD

Model

Small house
Short commute

Little time at home
~
Long hours

Large house
Long commute

Time at home
~
Short hours

Price, rent:

Distance to CBD

Model

Small house
Short commute

Little time at home
~
Long hours

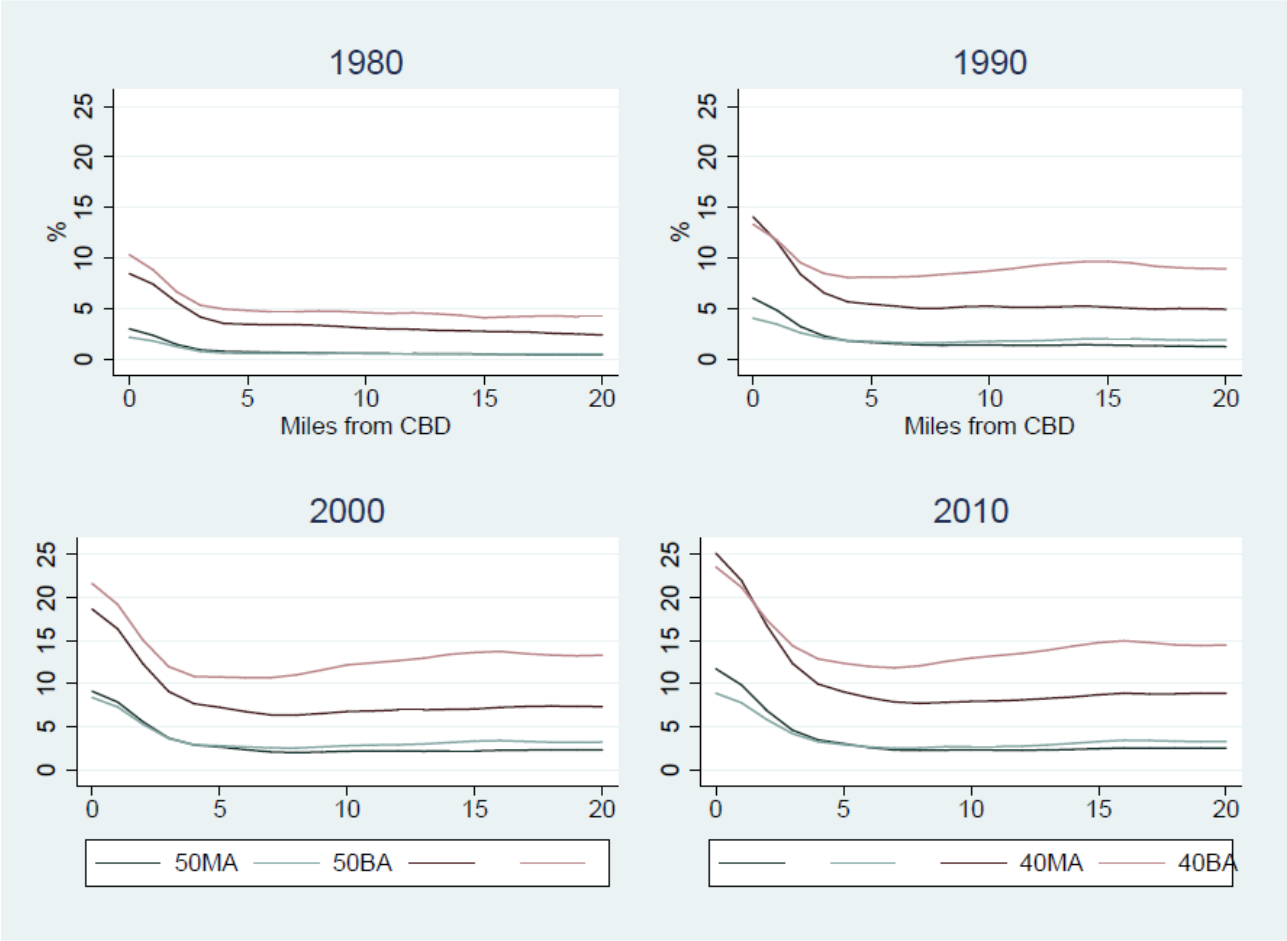
Large house
Long commute

Time at home
~
Short hours

Price, rent:

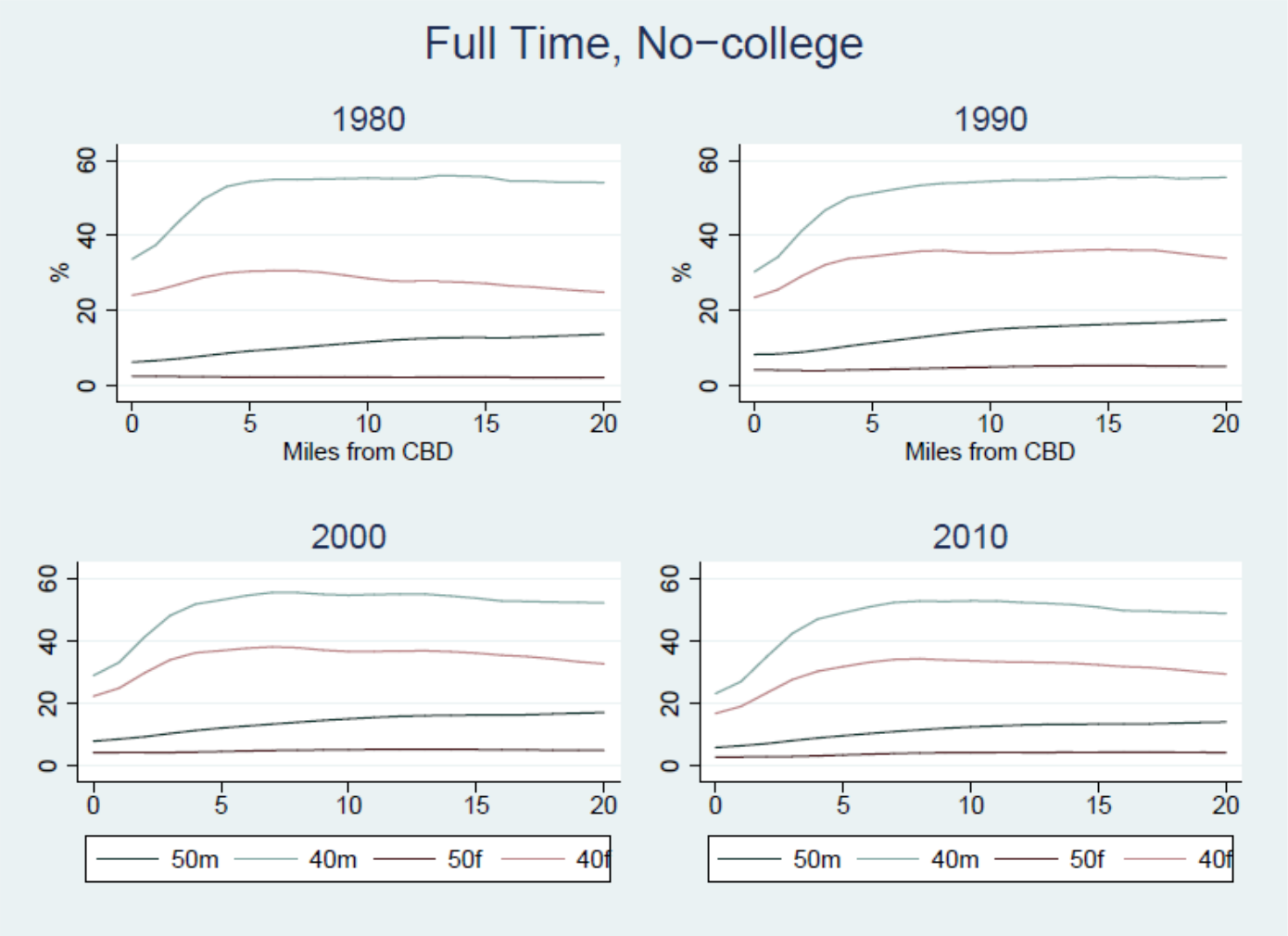
Distance to CBD

FT – Women
Distance to CBD



EMS 2015, NBER WP 21729

FT – No College
Distance to CBD

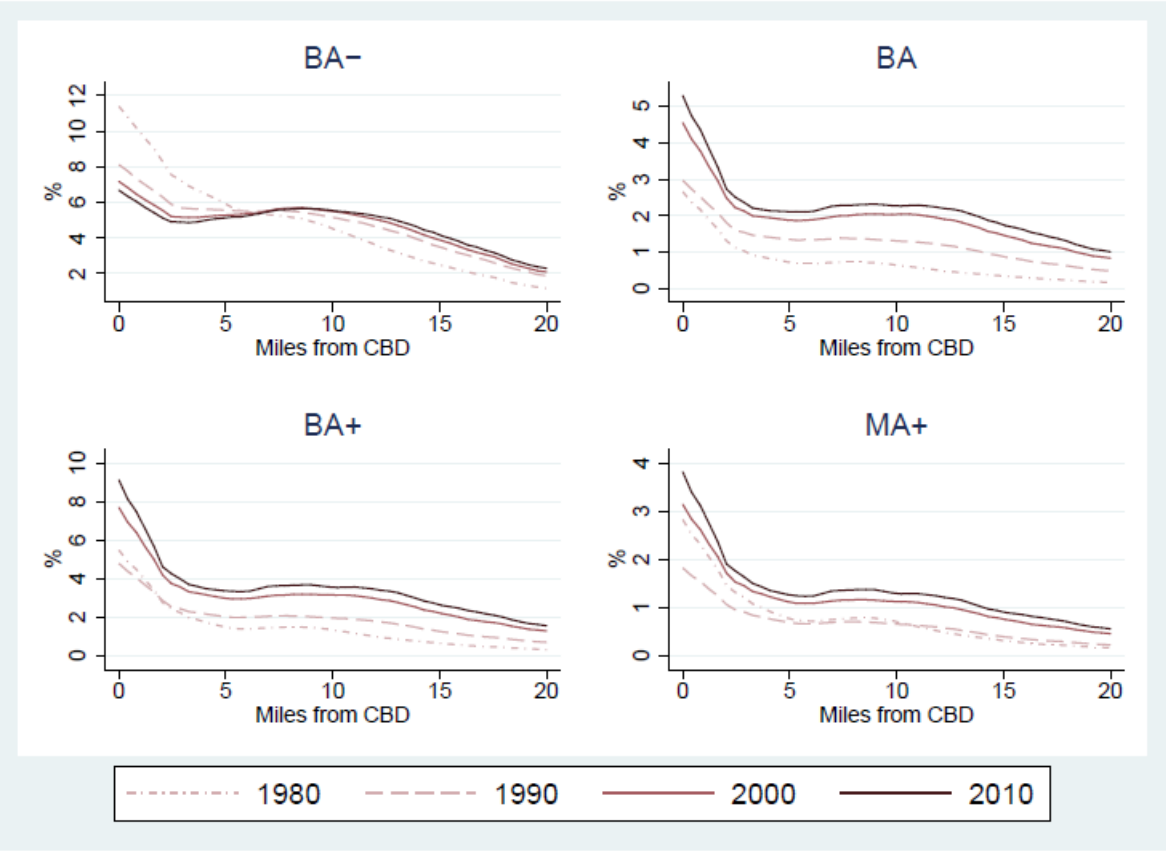


Note: Green – men, Red – Women. Universe, all men (women) ages 30-50 in tract.
Source: RDC.

EMS 2015, NBER WP 21729

Jobs in CBD
Suburbanization of Unskilled Jobs

Correction,
y scale wrong



Universe: filled jobs within 35 miles of the CBD.
Source: Decennial censuses and the American Community Survey, restricted use data.

EMS 2015, NBER WP 21729

Empirical Strategy

OLS:

$$PRICE_{ijdt} = \alpha_1 FT(h,e)_{ijdt} + \alpha_2 dist_{ijdt}\, FT(h,e)_{ijdt} + \alpha_3 dist_{ijdt} + \alpha_{jt} + \alpha_{jd} + \alpha_{dt} + \epsilon_{ijdt}$$

City-year, City-distance, Distance-year

Empirical Strategy

OLS:

$$PRICE_{ijdt} = \alpha_1 FT(h,e)_{ijdt} + \alpha_2 dist_{ijdt}\, FT(h,e)_{ijdt} + \alpha_3 dist_{ijdt} + \alpha_{jt} + \alpha_{jd} + \alpha_{dt} + \epsilon_{ijdt}$$

City-year, City-distance, Distance-year

Bartik demand shifter skilled labor:

$$Z_{jt} = \frac{1}{N_{j,1970}} \sum_{h}^{41} n_{h,j,1970} \times (\ln n_{h,-j,t} - \ln n_{h,-j,1970})$$

Empirical Strategy

OLS:

$$PRICE_{ijdt} = \alpha_1 FT(h,e)_{ijdt} + \alpha_2 dist_{ijdt}\, FT(h,e)_{ijdt} + \alpha_3 dist_{ijdt} + \alpha_{jt} + \alpha_{jd} + \alpha_{dt} + \epsilon_{ijdt}$$

City-year, City-distance, Distance-year

Bartik demand shifter skilled labor:

$$Z_{jt} = \frac{1}{N_{j,1970}} \sum_{h}^{41} n_{h,j,1970} \times (\ln n_{h,-j,t} - \ln n_{h,-j,1970})$$

City-Distance-Year variation:

$$Z_{jdt} = Z_{jt}(1 + d1 + d2 + d3)$$

Empirical Strategy

OLS:

$$PRICE_{ijdt} = \alpha_1 FT(h,e)_{ijdt} + \alpha_2 dist_{ijdt}\, FT(h,e)_{ijdt} + \alpha_3 dist_{ijdt} + \alpha_{jt} + \alpha_{jd} + \alpha_{dt} + \epsilon_{ijdt}$$

City-year, City-distance, Distance-year

Bartik demand shifter skilled labor:

$$Z_{jt} = \frac{1}{N_{j,1970}} \sum_{h}^{41} n_{h,j,1970} \times (\ln n_{h,-j,t} - \ln n_{h,-j,1970})$$

City-Distance-Year variation:

$$Z_{jdt} = Z_{jt}(1 + d1 + d2 + d3)$$

Reduced form:

$$PRICE_{ijdt} = \beta_0 \times Z_{jt} + \boldsymbol{F}'_{ijdt}\, \boldsymbol{\beta_1} \times Z_{jt} + \alpha_j + \alpha_d + \alpha_t + \epsilon_{ijdt}$$

City, Distance, Year

2-way interactions

Reduced Form
House $ on Bartik

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Dependent Variable: House price ('000) 1980$								
Z	522.0*	425.7							
	[278.0]	[264.1]							
$Z\times$									
$d1$		588.9***	580.7***	633.1***	777.4***	561.7**			
		[168.6]	[169.1]	[123.1]	[264.1]	[259.7]			
$d2$		234.5***	249.7***	285.2***	235.6				
		[52.21]	[49.95]	[54.47]	[144.8]				
$d3$		88.25***	98.22***	153.8***	319.5*				
		[18.25]	[18.49]	[41.01]	[173.0]				
$Z\times$									
$dist$									
$dist^2$									
R^2	0.317	0.333	0.362	0.400	0.401	0.401			
Fixed effects:									
City	✓	✓							
Year	✓	✓							
City-Year			✓	✓	✓	✓			
City-Distance				✓	✓	✓			
Distance-Year					✓	✓			

Reduced Form
House $ on Bartik

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Dependent Variable: House price ('000) 1980$								
Z	522.0*	425.7							
	[278.0]	[264.1]							
$Z\times$									
$d1$		588.9***	580.7***	633.1***	777.4***	561.7**			
		[168.6]	[169.1]	[123.1]	[264.1]	[259.7]			
$d2$		234.5***	249.7***	285.2***	235.6				
		[52.21]	[49.95]	[54.47]	[144.8]				
$d3$		88.25***	98.22***	153.8***	319.5*				
		[18.25]	[18.49]	[41.01]	[173.0]				
$Z\times$									
$dist$							-50.30***	-47.79***	-42.65***
							[13.92]	[7.843]	[9.668]
$dist^2$							1.053***	0.928***	0.819***
							[0.307]	[0.156]	[0.150]
R^2	0.317	0.333	0.362	0.400	0.401	0.401	0.353	0.401	0.402
Fixed effects:									
City	✓	✓							
Year	✓	✓							
City-Year			✓	✓	✓	✓	✓	✓	✓
City-Distance				✓	✓	✓		✓	✓
Distance-Year					✓	✓			✓

1st Stage

	(1)	(2)	(3)	(4)	(5)
	Dependent Variable: $FT(40, BA+)$				
Z	11.56				
	[13.91]				
$Z\times$					
$d1$		97.27***	33.10**	120.6*	129.4***
		[12.58]	[13.43]	[59.46]	[39.51]
$d2$		16.94	-31.30***	24.02	
		[14.58]	[8.369]	[44.49]	
$d3$		6.977	-16.11*	-54.85*	
		[16.93]	[8.549]	[29.14]	
R^2	0.185	0.203	0.318	0.320	0.320
Fixed effects:					
city	✓				
year	✓				
city-year		✓	✓	✓	✓
city-distance			✓	✓	✓
year-distance				✓	✓

OLS

	(1)	(2)	(3)	(4)
	Dependent Variable: A. $FT(40, BA+)$			
FT	1.829***	1.831***	2.037***	1.838***
	[0.167]	[0.167]	[0.164]	[0.147]
$FT \times dist$			-0.0170**	-0.000484
			[0.00686]	[0.00501]
R^2	0.475	0.482	0.475	0.482
Fixed effects:				
City-Year	✓	✓	✓	✓
City-Distance	✓	✓	✓	✓
Distance-Year		✓		✓

IV

	(1)	(2)	(3)	(4)	(5)
	Dependent Variable: House price ('000) 1980$				
	A. $FT(40, BA+)$				
FT	2.007*	1.71	4.341***	5.026***	3.429**
	[1.201]	[1.363]	[1.215]	[1.049]	[1.508]
$FT \times dist$				-0.194***	-0.401**
				[0.0185]	[0.166]
K-P LM test (p)	0.00615	0.0353	0.00704	0.0024	0.03
C-D $Wald$ stat.	77.35	32.45	53.9	76.86	12.49
K-P $Wald$ stat.	20	6.007	10.82	18.99	3.023
Overid. test (p)	0.0456	0.105	.	0.228	0.29
Fixed effects:					
City-Year	✓	✓	✓	✓	✓
City-Distance	✓	✓	✓	✓	✓
Distance-Year		✓	✓		✓

IV

(1), (2): $FT = Z\,d1,\ Z\,d2,\ Z\,d3$

(3): $FT = Z\,d1$

(4), (5): $FT,\ FT \times dist = Z\,d1,\ Z\,d2,\ Z\,d3$

	(1)	(2)	(3)	(4)	(5)
	Dependent Variable: House price ('000) 1980$				
	A. $FT(40, BA+)$				
FT	2.007*	1.71	4.341***	5.026***	3.429**
	[1.201]	[1.363]	[1.215]	[1.049]	[1.508]
$FT \times dist$				-0.194***	-0.401**
				[0.0185]	[0.166]
K-P LM test (p)	0.00615	0.0353	0.00704	0.0024	0.03
C-D $Wald$ stat.	77.35	32.45	53.9	76.86	12.49
K-P $Wald$ stat.	20	6.007	10.82	18.99	3.023
Overid. test (p)	0.0456	0.105	.	0.228	0.29
Fixed effects:					
City-Year	✓	✓	✓	✓	✓
City-Distance	✓	✓	✓	✓	✓
Distance-Year		✓	✓		✓

IV

(1), (2): $FT = Z\,d1,\ Z\,d2,\ Z\,d3$

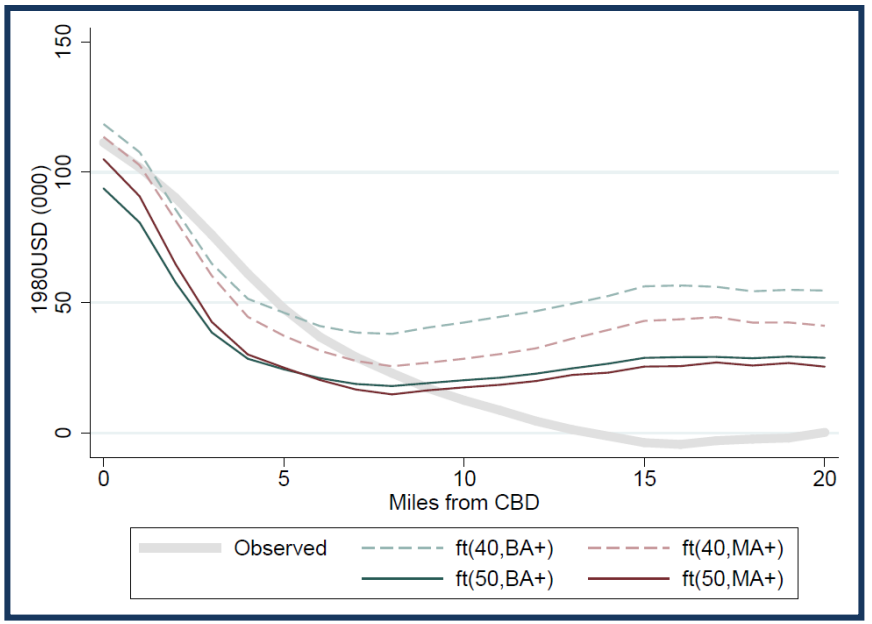
(3): $FT = Z\,d1$

(4), (5): $FT,\ FT \times dist = Z\,d1,\ Z\,d2,\ Z\,d3$

	(1)	(2)	(3)	(4)	(5)
	Dependent Variable: House price ('000) 1980$				
	A. $FT(40, BA+)$				
FT	2.007*	1.71	4.341***	5.026***	3.429**
	[1.201]	[1.363]	[1.215]	[1.049]	[1.508]
$FT \times dist$				-0.194***	-0.401**
				[0.0185]	[0.166]
K-P LM test (p)	0.00615	0.0353	0.00704	0.0024	0.03
C-D $Wald$ stat.	77.35	32.45	53.9	76.86	12.49
K-P $Wald$ stat.	20	6.007	10.82	18.99	3.023
Overid. test (p)	0.0456	0.105	.	0.228	0.29
Fixed effects:					
City-Year	✓	✓	✓	✓	✓
City-Distance	✓	✓	✓	✓	✓
Distance-Year		✓	✓		✓

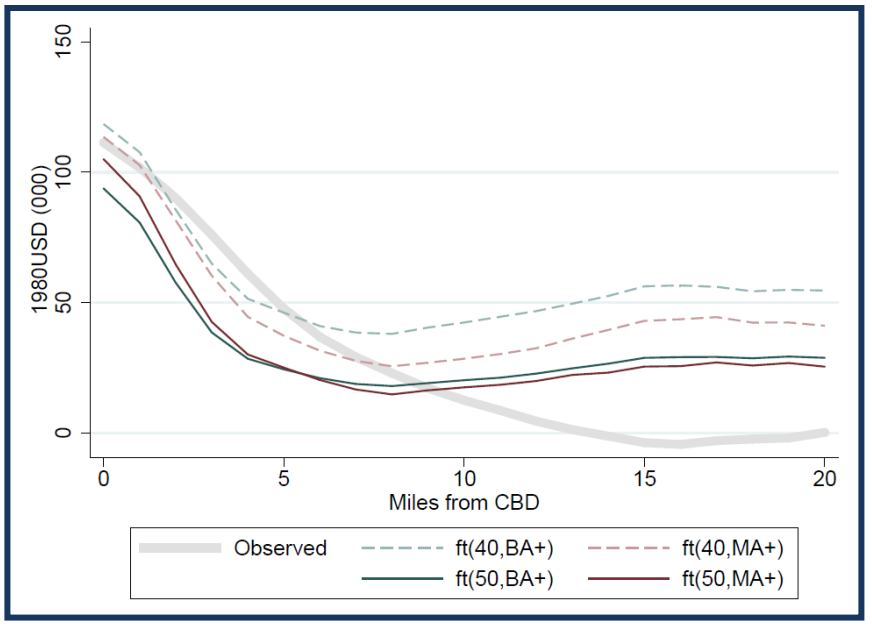
IV

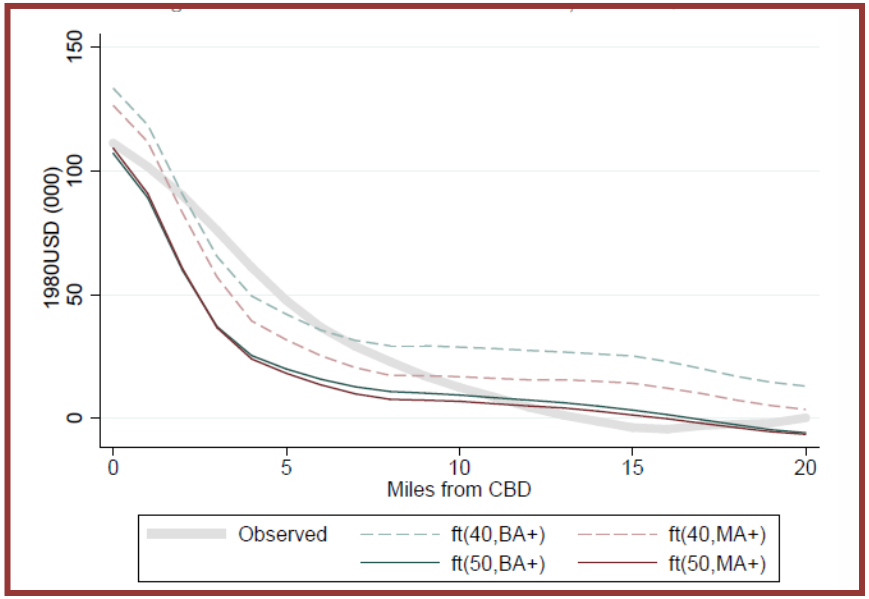
	(1)	(2)	(3)	(4)	(5)
			A. $FT(40, BA+)$		
FT	2.007*	1.71	4.341***	5.026***	3.429**
	[1.201]	[1.363]	[1.215]	[1.049]	[1.508]
$FT \times dist$				-0.194***	-0.401**
				[0.0185]	[0.166]
K-P LM test (p)	0.00615	0.0353	0.00704	0.0024	0.03
C-D $Wald$ stat.	77.35	32.45	53.9	76.86	12.49
K-P $Wald$ stat.	20	6.007	10.82	18.99	3.023
Overid. test (p)	0.0456	0.105	.	0.228	0.29
			B. $FT(40, MA+)$		
FT	3.212	4.595	9.765***	11.11***	5.943
	[2.605]	[3.232]	[2.759]	[2.408]	[4.049]
$FT \times dist$				-0.499***	-0.666**
				[0.0541]	[0.320]
K-P LM test (p)	0.00438	0.0233	0.0053	0.0018	0.0589
C-D $Wald$ stat.	63.02	20.08	38.88	62.22	9.431
K-P $Wald$ stat.	30.01	4.68	12.92	20.62	1.54
Overid. test (p)	0.0589	0.149	.	0.195	0.219
Fixed effects:					
City-Year	✓	✓	✓	✓	✓
City-Distance	✓	✓	✓	✓	✓
Distance-Year		✓	✓		✓



IV

	(1)	(2)	(3)	(4)	(5)
			A. $FT(40, BA+)$		
FT	2.007*	1.71	4.341***	5.026***	3.429**
	[1.201]	[1.363]	[1.215]	[1.049]	[1.508]
$FT \times dist$				-0.194***	-0.401**
				[0.0185]	[0.166]
K-P LM test (p)	0.00615	0.0353	0.00704	0.0024	0.03
C-D $Wald$ stat.	77.35	32.45	53.9	76.86	12.49
K-P $Wald$ stat.	20	6.007	10.82	18.99	3.023
Overid. test (p)	0.0456	0.105	.	0.228	0.29
			B. $FT(40, MA+)$		
FT	3.212	4.595	9.765***	11.11***	5.943
	[2.605]	[3.232]	[2.759]	[2.408]	[4.049]
$FT \times dist$				-0.499***	-0.666**
				[0.0541]	[0.320]
K-P LM test (p)	0.00438	0.0233	0.0053	0.0018	0.0589
C-D $Wald$ stat.	63.02	20.08	38.88	62.22	9.431
K-P $Wald$ stat.	30.01	4.68	12.92	20.62	1.54
Overid. test (p)	0.0589	0.149	.	0.195	0.219
Fixed effects:					
City-Year	✓	✓	✓	✓	✓
City-Distance	✓	✓	✓	✓	✓
Distance-Year		✓	✓		✓





IV

Sub-samples

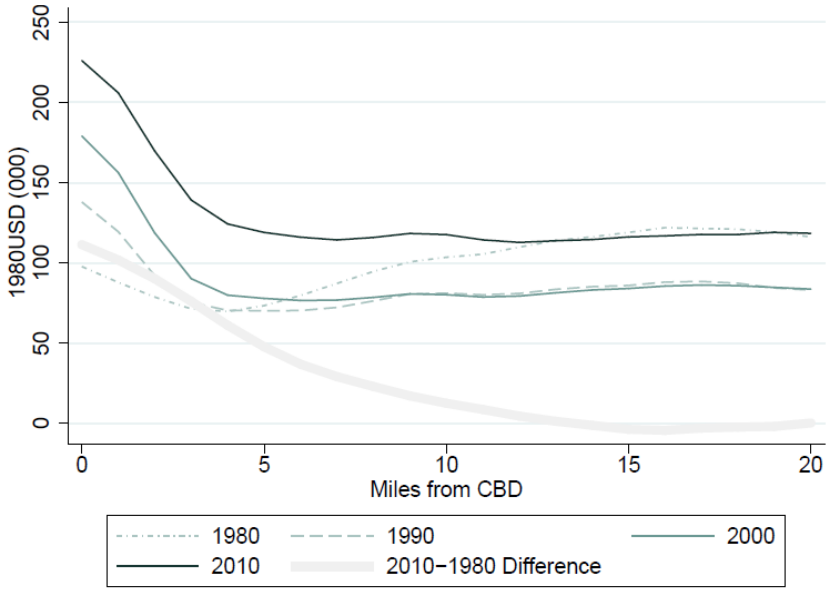
- Crime
  - Cities in which decline high/low
  - Time period
    - 1980,1990 – Crime rose
    - 2000,2012 – Crime declined
- Not NYC
- Real Estate Supply Inelastic
  - Cities that shrunk/grew

Tract-panel

- Tract fixed effects
- Tracts with high/low black population

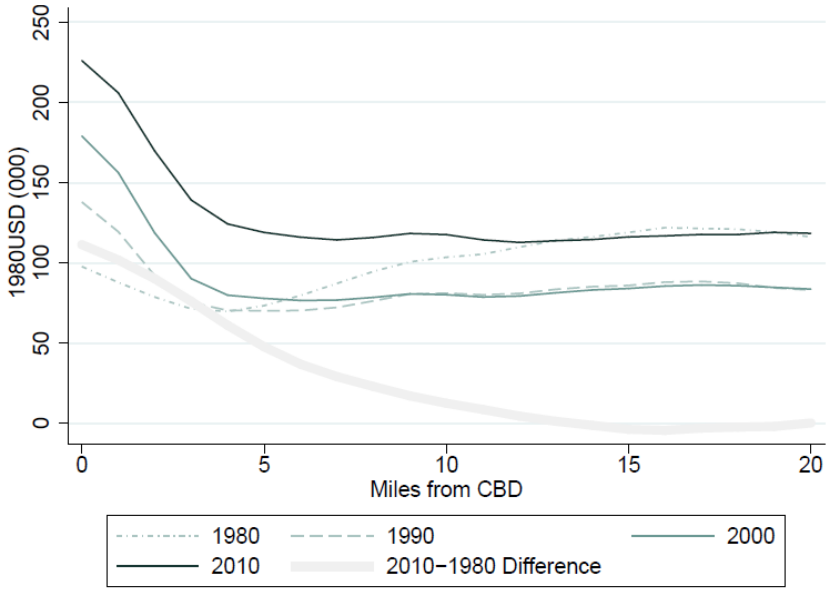
Summary

Observation



Summary

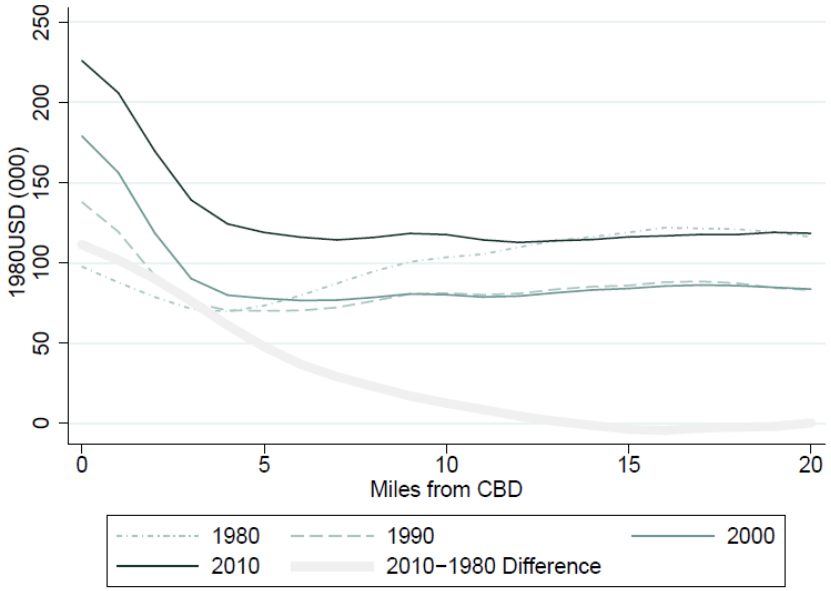
Observation



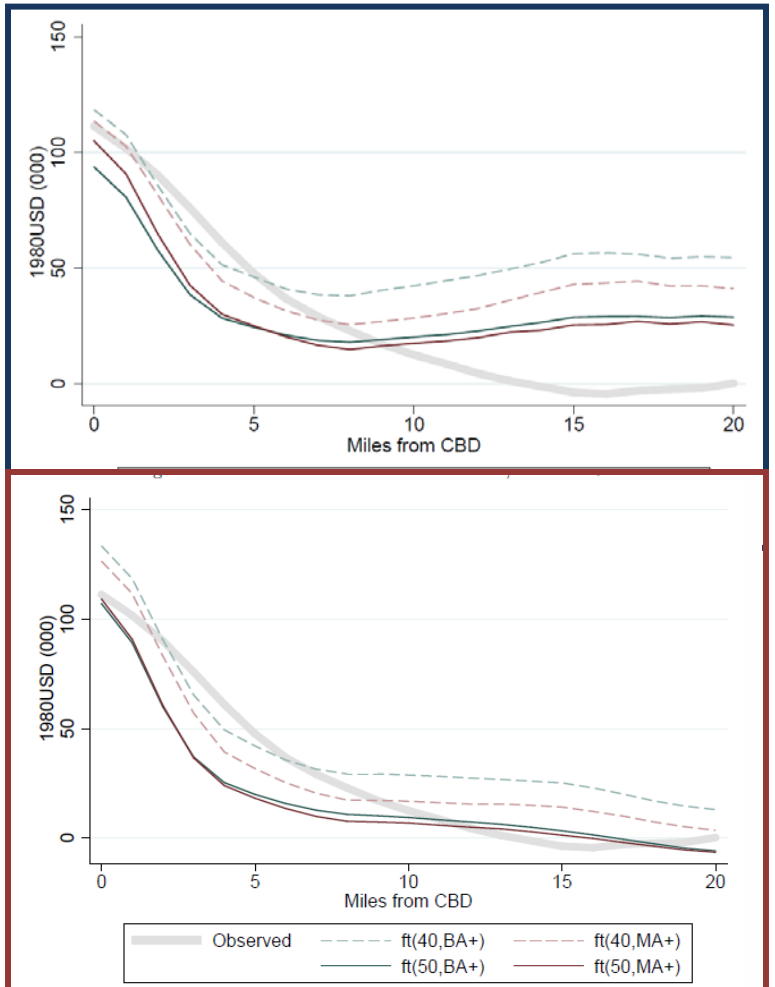
Proposed Explanation

Summary

Observation



Proposed Explanation



The End