Does Inequality Reduce Happiness? Evidence from the States of the USA from the 1970s to the 1990s

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We pool together the General Social Surveys from 1976 to 1996, and add a variable for earnings inequality for each state of the US in each year. We estimate happiness regression equations. First, conceptually:

- **By concavity, we would expect income inequality to depress the average level of happiness. Human beings may also be upset by seeing inequality around them.**

Second, empirically, we find:

- **There is evidence that inequality reduces happiness.**
- **The effect is moderate in size. A move of four standard deviations in inequality leads to a change in happiness about equal to the male/female difference in happiness (or, say, one fifth of the unhappiness effect of marital separation).**
- **We allow for personal variables, relative income, state unemployment, state dummy variables, and year dummies.**
- **The happiness-depressing effect of inequality is stronger among women (in the male sub-sample the effect of inequality on reported wellbeing is small/insignificant).**
- **The effect is stronger among people under 30 years of age, among workers, and among those with low education levels.**
- **<u>General notes</u> Sample size across the years is about 26,000 people. Regression equations are read vertically. We measure inequality by taking the ratio of the mean of 5th quintile earnings to 1st quintile earnings. The mean of the inequality variable is approximately 30 and the standard deviation is 12. Happiness in the GSS is measured on a three-point scale: very happy (approximately 32% of Americans say this); quite happy (56%); not very happy (12%).**

Table 1. Happiness Equations with Inequality and Relative Income for the United States (Ordered Logits), 1976-96

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
						Workers	Non-workers	Workers	Non-workers
State earnings inequality	-.0030	-.0029	-.0032	-.0032	-.0038	-.0061	-.0001	-.0062	.0000
	(3.22)	(2.98)	(2.05)	(2.05)	(2.52)	(3.17)	(0.03)	(3.19)	(0.01)
Log household income per capita	.1737	.2100	.2251	.1803	.2222	.2107	.2190	.1772	.1524
	(11.67)	(13.27)	(14.08)	(7.18)	(13.95)	(9.74)	(9.12)	(4.87)	(4.27)
Relative income				.0734				.0466	.1440
				(2.31)				(1.15)	(2.51)
Time trend					-.0162	-.0149	-.0165	-.0127	-.0121
					(7.23)	(5.20)	(4.48)	(3.62)	(2.98)
State dummies (44)	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies (16)	No	Yes	Yes	Yes	No	No	No	No	No
Personal controls (14)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	26219	26219	26219	26219	26219	16673	9546	16673	9546
Chi^2	2188.0	2273.8	2395.7	2401.1	2350.3	1186.6	1170.9	1187.2	1177.2
Pseudo R^2	.0446	.0468	.0488	.0489	.0479	.0394	.0623	.0395	.0626

Notes: relative income term = household income per capita / state income per capita.
Source of data on state per capita income – US Dept. of Commerce, Bureau of Economic Analysis.
Downloadable at http://www.bea.doc.gov/bea/regional/spi/
State earnings inequality = mean 5th quintile earnings/mean 1st quintile earnings. Data obtained from the March CPS and provided to us kindly by Tim Bartik
Personal controls are age, age squared, male, years of schooling, 2 race dummies, 2 work status dummies, parents divorced when respondent aged 16, 5 marital status dummies

Table 2. Happiness Equations for the United States (Ordered Logits), 1976-96

	(1) All	(2) Workers	(3) Non-workers	(4) Workers
State earnings inequality	-.0022	-.0048	-.0021	-.0055
	(1.38)	(2.37)	(0.79)	(2.71)
Log household income per capita	.1788	.1774	.1512	
	(7.17)	(4.87)	(4.24)	
Log annual earnings				.0748
				(3.23)
Relative income	.0729	.0480	.1472	.1748
	(2.31)	(1.18)	(2.57)	(6.53)
Log state unemployment rate	-.2493	-.2048	-.3034	-.1987
	(4.34)	(2.76)	(3.32)	(2.62)
Time trend	-.0175	-.0162	-.0170	-.0081
	(6.30)	(4.35)	(3.93)	(2.44)
N	26219	16673	9546	15873
Chi^2	2374.2	1195.5	1188.3	1132.7
Pseudo R^2	.0484	.0397	.0632	.0396

Notes: relative income term = household income per capita / state income per capita. All equations include state dummies and personal controls as in table 1.
Source of data on state per capita income – US Dept. of Commerce, Bureau of Economic Analysis.
Downloadable at http://www.bea.doc.gov/bea/regional/spi/
State earnings inequality = mean 5th quintile earnings/mean 1st quintile earnings. Data obtained from the March CPS and provided to us kindly by Tim Bartik

Table 3. Happiness Equations for the United States for Different Groups of People (Ordered Logits), 1976-96 workers only

	(1) Males	(2) Females	(3) Whites	(4) Non-whites	(5) Age<30	(6) Age>=30	(7) <=12 years education	(8) >12 years education
State earnings inequality	-.0027	-.0065	-.0040	-.0070	-.0117	-.0023	-.0069	-.0020
	(0.92)	(2.33)	(1.83)	(1.35)	(2.86)	(1.02)	(2.61)	(0.66)
Log household income per capita	.1968	.1368	.1841	.1448	.0687	.2224	.1572	.1644
	(3.83)	(2.52)	(4.37)	(1.90)	(1.06)	(4.89)	(3.15)	(2.88)
Relative income	.0401	.1276	.0606	-.0581	.1671	.0190	.1095	.0404
	(0.78)	(1.82)	(1.34)	(0.56)	(1.81)	(0.40)	(1.64)	(0.73)
Log state unemployment rate	-.2777	-.1481	-.2317	-.1019	.1906	-.3185	-.1380	-.2667
	(2.69)	(1.38)	(2.87)	(0.53)	(1.31)	(3.68)	(1.35)	(2.45)
Time trend	-.0107	-.0204	-.0191	-.0005	.0020	-.0226	-.0142	-.0153
	(2.06)	(3.73)	(4.64)	(0.05)	(0.28)	(5.05)	(2.74)	(2.76)
N	8667	8006	14080	2593	4279	12394	8143	8530
Chi^2	622.8	672.8	908.2	225.3	346.1	966.3	616.7	635.6
Pseudo R^2	.0400	.0462	.0364	.0457	.0455	.0429	.0408	.0426

Notes: relative income term = household income per capita / state income per capita.

Table 4. Happiness Equations using Group Means (ie. state-level averages) for the United States [OLS, 1976-96, workers only]

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
State earnings inequality	-.0014	-.0009	-.0004	-.0016	-.0017	-.0015	-.0016
	(3.44)	(2.19)	(1.03)	(2.82)	(2.97)	(2.77)	(2.86)
Log household income per capita		-.0062	.0311	.0292	.0380		
		(0.35)	(1.42)	(1.26)	(1.56)		
Log state unemployment rate		-.0724	-.0712	-.0857	-.0844	-.0840	-.0879
		(3.36)	(3.31)	(3.36)	(2.49)	(3.30)	(2.59)
Time trend		-.0026	-.0035	-.0047		-.0034	
		(1.80)	(2.22)	(2.74)		(2.51)	
State dummies	No	No	No	Yes	Yes	Yes	Yes
Year dummies	No	No	No	No	Yes	No	Yes
Personal controls	No	No	Yes	Yes	Yes	Yes	Yes
N	634	634	634	634	634	634	634
F	11.84	6.59	4.36	5.45	3.57	5.67	3.60
Adjusted R^2	.0168	.0341	.0827	.1609	.1668	.1601	.1647

Notes: personal controls as in Table 1 at the state/year cell level

Table 5. Happiness Equations with Lags using Group Means (ie. state-level averages) for the United States [OLS, 1976-96, workers only]

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged dependent variable				-.1563	-.1569	-.1566	
				(3.14)	(3.37)	(3.28)	
State earnings inequality					-.0016	-.0015	
					(2.48)	(2.25)	
State earnings inequality $_{t-1}$	.0001		-.0007	-.0008			
	(0.13)		(1.03)	(1.19)			
State earnings inequality $_{t-2}$		.0004	.0012	.0013			
		(0.78)	(1.48)	(1.67)			
Log state unemployment rate	-.0995	-.0622	-.0687	-.0823	-.1080	-.1154	
	(3.11)	(2.54)	(2.10)	(2.53)	(3.46)	(2.90)	
Time trend	-.0037	-.0018	-.0008	-.0010	-.0046		
	(2.01)	(1.27)	(0.37)	(0.44)	(2.81)		
Year dummies (11)	No	No	No	No	No	Yes	
N	450	582	408	408	483	483	
F	3.42	5.53	3.61	4.02	4.65	3.33	
Adjusted R^2	.1543	.1643	.1644	.1851	.1687	.1718	

Notes: all equations include a full set of state dummies and personal controls (as in Table 1 at the state/year cell level).