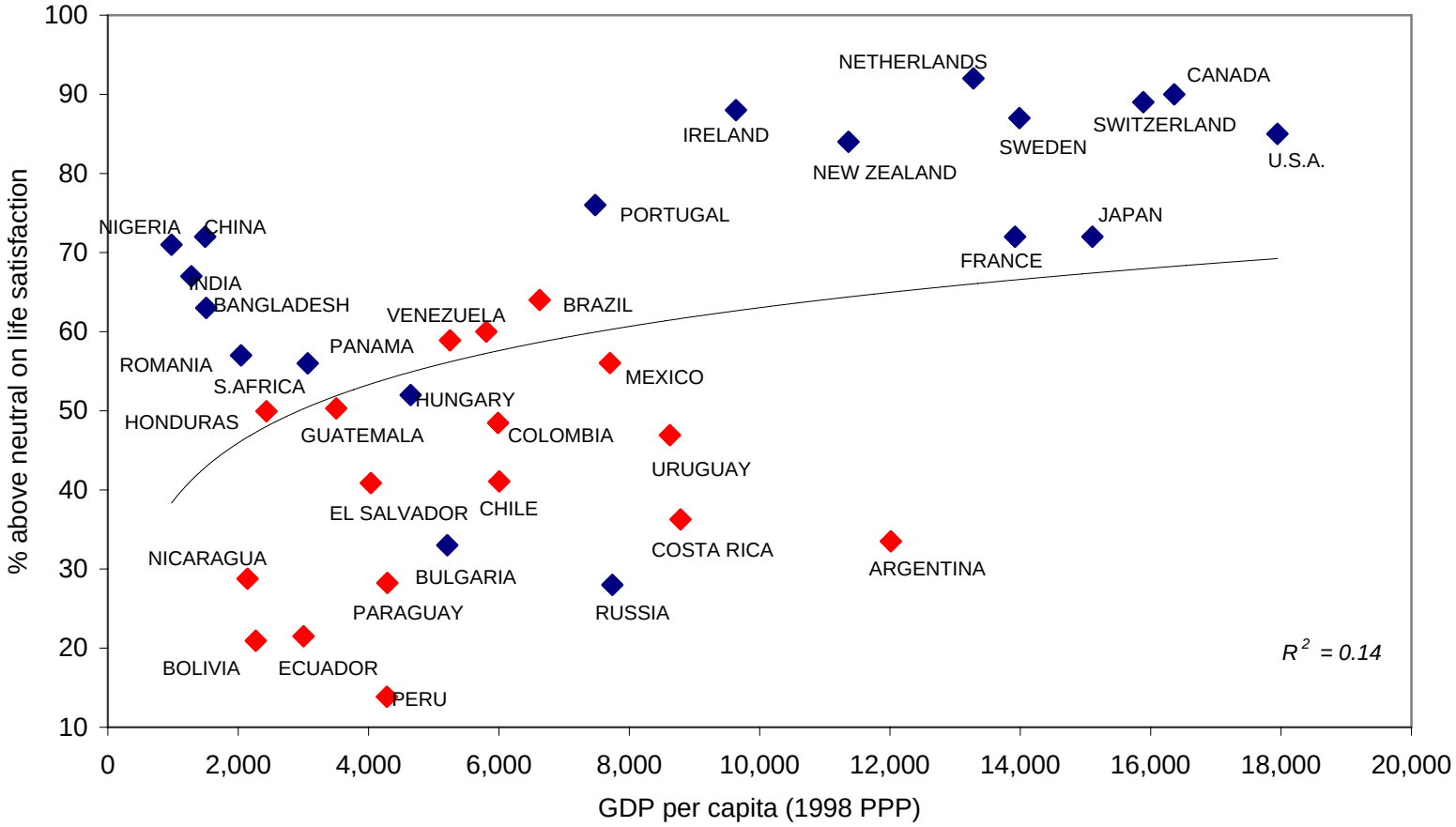
Happiness and Income Per Capita, 1990s



Source: Graham and Pettinato, 2002.

Table 1: Means and standard deviations (in parentheses)

Variable	**1995**	**2000**
happiness	2.209 (1.06)	2.355 (1.08)
age	40.673 (19.17)	45.677 (19.17)
age, squared	2104.208 (1674.04)	2453.682 (1822.74)
log equivalence income	7.873 (.86)	7.826 (.81)
education level	8.684 (2.17)	8.741 (2.15)
amount of drinking (index, 1-6)	2.329 (1.21)	2.353 (1.25)
male	0.422 (.49)	0.422 (.49)
minority	0.164 (.37)	0.164 (.37)
married	0.599 (.49)	0.542 (.50)
student	0.049 (.22)	0.116 (.32)
retired	0.236 (.42)	0.305 (.46)
housewife	0.043 (.20)	0.033 (.18)
unemployed	0.064 (.24)	0.085 (.28)
self-employed	0.011 (.11)	0.012 (.11)
health index (0, .3, .6, 1)	0.838 (.22)	0.820 (.22)
smoker	0.247 (.43)	0.280 (.45)
observations	5269	5269

The difference between the 1995 and 2000 mean values is not significant for any variable.

Source: RLMS Round 6 and Round 9 data, authors' calculations

Table 2: The correlates of happiness, 1995 and 2000

Dependent variable: Happiness (ordered logit regression)

	1995		**2000**		
Independent variables	coef	z	coef	z	t-stat for equivalence
age	-0.0742	-6.27	-0.0668	-7.42	0.498
age squared	0.0008	6.35	0.0007	7.15	-0.498
male	0.1419	2.41	0.1521	2.80	0.128
married	0.1490	2.15	0.0875	1.40	-0.659
log equivalence income	**0.4777**	13.97	**0.3892**	11.48	**-1.839**
education level	0.0305	1.87	0.0150	0.96	-0.688
minority	**0.3835**	5.21	**0.1721**	2.46	**-2.082**
student	0.4561	2.91	0.1991	1.59	-1.281
retired	-0.3029	-3.05	-0.3783	-3.97	-0.548
housewife	0.1814	1.34	0.0490	0.33	-0.661
unemployed	**-0.2434**	-2.19	**-0.6568**	-6.51	**-2.756**
selfemployed	0.7676	3.00	0.5375	2.23	-0.654
health index	0.2744	2.22	0.4462	3.82	1.010
observations	4524		5134		
pseudo R^2	0.0330		0.0331		

Table 3a: Income mobility in Russia, 1995-2000

	quintile 2000					
quintile 1995	1	2	3	4	5	Total
1	**33%**	27%	16%	13%	12%	100%
2	25%	**28%**	20%	16%	10%	100%
3	19%	19%	**25%**	21%	15%	100%
4	14%	15%	23%	**25%**	23%	100%
5	9%	11%	16%	25%	**40%**	100%
Total	100%	100%	100%	100%	100%	

Source: RLMS Round 6 and Round 9, authors' calculations using household equivalence income

Table 3b: Income mobility in the United States, 1979-1989

(numbers in bold indicate percentage of respondents who were in the same income quintile in 1995 and 2000)

	quintile 1989					
quintile 1979	1	2	3	4	5	Total
1	**61%**	24%	9%	5%	1%	100%
2	23%	**33%**	28%	14%	3%	100%
3	8%	25%	**30%**	26%	11%	100%
4	5%	13%	23%	**33%**	26%	100%
5	3%	5%	11%	23%	**59%**	100%
Total	100%	100%	100%	100%	100%	

Source: Mishel, Bernstein, and Schmitt (1999) (using family income)

Table 3c: Happiness mobility in Russia, 1995-2000

(percentages in parentheses indicate likelihood of obtaining a given happiness score in 2000, given 1995 happiness score)

	happiness score 2000					
happiness score	1	2	3	4	5	Total
1	**534 (37%)**	429 (37%)	173 (16%)	59 (8%)	23 (2%)	1218 (100%)
2	528 (22%)	**850 (44%)**	373 (20%)	135 (12%)	58 (2%)	1944 (100%)
3	233 (13%)	383 (36%)	**314 (30%)**	115 (15%)	37 (3%)	1082 (100%)
4	115 (13%)	221 (29%)	158 (25%)	**118 (26%)**	30 (14%)	642 (100%)
5	25 (13%)	34 (38%)	31 (22%)	32 (17%)	**24 (14%)**	146 (100%)
Total	1435 (102%)	1917 (180%)	1049 (113%)	459 (78%)	172 (27%)	

Source: RLMS Round 6 and Round 9 data, authors' calculations

happiness scores: 1: not at all satisfied
2: less than satisfied
3: both yes and no
4: rather satisfied
5: fully satisfied

Table 4: First difference regression

Dependent variable: change in happiness, 1995 to 2000 (ordered logit regression)		coef	z
static variables	age	-0.0400	-1.70
	age^2	0.0004	1.54
	male	0.0390	0.35
	minority	-0.0632	-0.51
changes in continuous variables	change in log equivalence income	**0.1875**	**4.21**
	change in education level	0.0312	0.62
	change in health index	0.0757	0.47
	change in level of drinking	-0.0102	-0.31
changes in status variables:	got married	-0.3802	-1.20
marriage	got divorced	**-0.5681**	**-3.20**
(omitted group: remained single)	stayed married	-0.1905	-1.57
	got employed	0.0608	0.19
employment	got unemployed	-0.2054	-0.65
(omitted: remained unemployed)	stayed employed	0.3554	1.35
	quit smoking	0.1451	0.58
smoking	started smoking	0.2488	1.19
(omitted: remained a non-smoker)	kept smoking	-0.0356	-0.31
	entered school	*	*
schooling	left school	**-0.8415**	**-2.38**
(omitted: remained a non-student)	stayed in school	-0.7139	-1.29
	became retired	-0.0699	-0.38
retirement	came out of retirement	0.2638	0.55
(omitted: remained a non-retiree)	stayed retired	-0.0731	-0.35
	observations	1673	
	pseudo R squared	0.0089	

* Dropped because of multicolinearity.

Table 5: The effects of happiness on income

Dependent Variable: Log equivalence income, 2000 (OLS)

	a		**b**		**c**	
Independent variables	coef	t	coef	t	coef	t
age	-0.0133	-3.00	-0.0132	-2.97	-0.0146	-3.25
age^2	0.0001	3.18	0.0001	3.15	0.0002	3.52
male	0.0102	0.42	0.0102	0.42	-0.0004	-0.02
married	0.2053	7.84	0.2054	7.84	0.2050	7.84
education level	0.0301	4.51	0.0301	4.51	0.0296	4.44
minority	0.1213	3.98	0.1227	4.03	0.1216	4.00
student	-0.0336	-0.34	-0.0301	-0.31	-0.0367	-0.38
retired	-0.1906	-4.85	-0.1899	-4.83	-0.1659	-4.18
housewife	-0.2488	-3.90	-0.2492	-3.90	-0.2388	-3.73
unemployed	-0.3450	-8.16	-0.3435	-8.12	-0.3426	-8.07
selfemployed	0.1415	1.46	0.1411	1.46	0.1284	1.33
health index	0.0601	1.11	0.0588	1.09	0.0559	1.04
log equiv income 95	0.2420	18.11	0.2429	18.12	0.2244	15.69
log equiv income 95, poor**	*	*	*	*	0.0094	2.60
log equiv income 95, rich**	*	*	*	*	0.0180	4.36
unexplained happiness, 95***	**0.0298**	**2.64**	**0.0634**	**2.32**	**0.0269**	**2.38**
unexp. happiness, 95***, 2nd quint	*	*	**-0.0436**	**-1.14**	*	*
unexp. happiness, 95***, 3nd quint	*	*	**-0.0361**	**-0.95**	*	*
unexp. happiness, 95***, 4th quint	*	*	**-0.0626**	**-1.71**	*	*
unexp. happiness, 95***, 5th quint	*	*	**-0.0229**	**-0.65**	*	*
constant	5.8325	36.35	5.8234	36.19	5.9365	34.62
number of observations	4457		4457		4457	
adjusted R-squared	0.1335		0.1333		0.1518	

* omitted

** "poor" is defined as bottom 40% of the income distribution in 1995; "rich" is the top 20%

*** the residual of basic happiness 1995 regression (Table 2)

Regression a: no income quintile distinctions

Regression b: testing for a difference in the effect of unexplained happiness on 2000 income, by 1995 income quintile

Regression c: testing for a difference in the effect of 1995 income on 2000 income, by 1995 income quintile

Independent variables are from 2000 unless otherwise noted.

Table 6: The effects of income on happiness

Dependent variable: Happiness in 2000 (ordered logit)

	a		**b**	
Independent variables	coef	z	coef	z
age	-0.0781	-7.06	-0.0830	-7.41
age^2	0.0008	6.97	0.0008	7.20
male	0.1572	2.65	0.1430	2.39
married	0.0698	1.08	0.0717	1.11
education level	0.0211	1.27	0.0175	1.05
minority	0.2088	2.80	0.2195	2.94
student	-0.3473	-1.48	-0.2912	-1.24
retired	-0.3972	-4.08	-0.3694	-3.75
housewife	-0.0803	-0.53	-0.0446	-0.29
unemployed	-0.6742	-6.34	-0.6434	-6.02
selfemployed	0.4541	1.89	0.4439	1.84
health index	0.4000	3.05	0.3966	3.02
log equiv income 00	0.2438	7.21	0.3176	8.38
log equiv income 95	**0.3199**	**8.46**	**0.2128**	**5.94**
log equiv income 95, rich**	*	*	**0.0163**	**1.62**
log equiv income 95, poor**	*	*	**-0.0146**	**-1.65**
unexplained happiness, 95***	0.4158	14.50	0.4096	14.24
number of observations	4414		4414	
pseudo R-squared	0.0474		0.0481	

* omitted

** "poor" is defined as bottom 40% of the income distribution in 1995; "rich" is the top 20%

*** the residual of basic happiness 1995 regression (Table 2)

Regression a: no income quintile distinctions

Regression b: testing for a difference in the effect of 1995 income on 2000 income by 1995 income quintile

Table 7: The effect of changes in income on happiness

Dependent Variable: Happiness in 2000 (ordered logit)

Independent variables	coef	z
age	-0.0781	-7.06
age^2	0.0008	6.97
male	0.1572	2.65
married	0.0698	1.08
education level	0.0211	1.27
minority	0.2088	2.80
student	-0.3473	-1.48
retired	-0.3972	-4.08
housewife	-0.0803	-0.53
unemployed	-0.6742	-6.34
selfemployed	0.4541	1.89
health index	0.4000	3.05
unexplained happiness, 1995*	0.4158	14.50
log equivalence income, 1995	0.5637	12.83
change in log income, 1995-2000	**0.3199**	**8.46**
number of observations	4414	
pseudo R-squared	0.0474	

* the residual of basic happiness 1995 regression (Table 2)

Independent variables are from 2000 unless otherwise noted.

Table 8: Correlation of perceptions variables with happiness

Dependent variable: happiness in 2000 (ordered logit regression)

	a		**b**	
Independent variables	coef	z	coef	z
age	-0.0742	-6.27	-0.0707	-2.90
age squared	0.0008	6.35	0.0009	3.00
male	0.1419	2.41	0.2061	2.35
married	0.1490	2.15	0.0246	0.24
log equivalence income	0.4777	13.97	0.2361	4.08
education level	0.0305	1.87	-0.0198	-0.53
minority	0.3835	5.21	-0.1504	-1.23
student	0.4561	2.91	-0.7337	-0.97
retired	-0.3029	-3.05	**	**
housewife	0.1814	1.34	0.1227	0.36
unemployed	-0.2434	-2.19	**	**
selfemployed	0.7676	3.00	0.0032	0.01
health index	0.2744	2.22	**0.0140**	**0.08**
fear of unemployment	*	*	**-0.1221**	**-4.05**
economic ladder question	*	*	**0.4789**	**15.14**
perceived past mobility	*	*	**0.2203**	**5.34**
pro-democracy	*	*	**0.2462**	**5.43**
observations	4524		1969	
pseudo R^2	0.0330		0.0906	

* omitted

** dropped due to multicollinearity

Regression a: no perceptions variables included

Regression b: perceptions variables included

Table 9: Effect of perceptions variables on future income

Dependent variable: log equivalence income in 2000 (OLS)

	a		**b**	
Independent variables	coef	t	coef	t
age	-0.0133	-3.00	-0.0087	-0.78
age^2	0.0001	3.18	0.0001	1.24
male	0.0102	0.42	-0.0081	-0.23
married	0.2053	7.84	0.2410	6.15
education level	0.0301	4.51	0.0325	2.44
minority	0.1213	3.98	0.0806	1.80
student	-0.0336	-0.34	0.4268	1.07
retired	-0.1906	-4.85	-0.2726	-4.60
housewife	-0.2488	-3.90	-0.1659	-1.60
unemployed	-0.3450	-8.16	-0.3726	-5.82
selfemployed	0.1415	1.46	0.0936	0.72
health index	0.0601	1.11	0.0609	0.84
log equiv income 96	0.2420	18.11	0.2299	11.55
unexplained happiness, 95**	**0.0298**	**2.64**	**-0.0020**	**-0.11**
fear of unemployment, 95	*	*	-0.0143	-1.22
family better off next year, 95	*	*	0.0411	2.27
economic ladder question, 95	*	*	0.0274	2.17
constant	5.8325	36.35	5.5325	17.49
observations	4457		2296	
adjusted R-squared	0.1335		0.1262	17.47

* omitted

** the residual of basic happiness 1995 regression (Table 2)

Independent variables are from 2000 unless otherwise noted.

Regression a: no perceptions variables

Regression b: perceptions variables included

Not surprisingly, the effect of unexplained happiness 1995 on income 2000 also disappears when we calculate unexplained happiness using these perceptions variables as explanatory variables. (Results available from authors on request.)

Table 10: The effects of happiness on marriage status, employment, and health

Dependent variable:	**divorce by 2000**		**married by 2000**		**unemployed in 2000**		**2000 health**
Condition:	(given married 1995)		(given unmarried 1995)				
Regression technique:	*logit*		*logit*		*logit*		*OLS*
	a		**b**		**c**		**d**
Independent variables	coef	z	coef	z	coef	z	coef
age	-0.1061	-4.00	0.1023	2.12	0.1609	3.86	-0.0023
age^2	0.0012	4.57	-0.0017	-2.71	-0.0023	-4.62	0.0000
male	*-0.8974*	*-7.50*	0.1331	0.62	0.8566	6.85	0.0319
married	*	*	*	*	-0.3410	-2.55	0.0109
education level	-0.0134	-0.43	-0.0171	-0.21	0.0356	0.71	-0.0001
minority	-0.2832	-1.77	-0.1190	-0.44	0.4020	2.94	0.0129
student	**	**	-1.1540	-2.08	0.8497 ***	3.08	-0.0638
retired	0.1634	0.84	-0.7226	-1.39	-0.9747 ***	-2.15	-0.0507
housewife	*	*	*	*	0.8314 ***	3.59	0.0345
unemployed	0.5603	2.79	0.1352	0.50	1.7353 ***	11.69	0.0332
selfemployed	0.1159	0.24	**	**	0.4387 ***	1.10	0.0014
log equiv income	-0.3646	-5.45	0.4490	3.40	-0.2341	-3.96	0.0040
health index	-0.7259	-2.88	-0.2853	-0.65	0.7837****	2.70	0.1524 ***
unexplained happiness, 95	**-0.0365**	**-0.65**	**-0.0044**	**-0.04**	**-0.0886**	**-1.56**	**0.0127**
constant	4.0965	4.75	-6.2979	-3.78	-4.4105	-4.06	0.7368
observations	3050		1397		4491		4457
pseudo R-squared	0.0759		0.1541		0.2077		0.0930

*Omitted

**Dropped: perfect predictor

***1995 values employed

****The unexpected sign here is a spurious artifact of one of the three questions underlying the health index: "In the last 30 days did you miss study days due to illness?" We obtain the expected negative relationship between good health and unemployment when when we use other m health.

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Table 11: Drinking, smoking, and happiness

Dependent variable: happiness (ordered logit regression)

	a 1995		**b** 2000		**c** 2000	
Independent variables	coef	z	coef	z	coef	z
age	-0.1018	-5.38	-0.1177	-7.23	-0.1233	-5.15
age squared	0.0012	5.53	0.0012	6.64	0.0013	4.90
male	0.0875	0.90	0.2339	2.51	0.2339	2.09
married	0.1655	1.70	0.1103	1.24	0.0359	0.34
log equivalence income	0.3903	8.33	0.3779	7.84	0.3814	6.53
education level	0.0609	2.37	0.0067	0.26	0.0289	0.93
minority	0.2425	2.31	0.1872	1.83	0.1148	0.93
student	0.5517	1.99	-0.1505	-0.76	-0.2954	-0.50
retired	-0.3959	-2.69	-0.3372	-2.39	-0.2364	-1.43
housewife	0.0743	0.35	-0.0606	-0.26	0.0495	0.17
unemployed	-0.3033	-2.10	-0.6749	-5.04	-0.7150	-4.25
selfemployed	0.9336	3.27	0.3546	1.20	0.2809	0.86
health index	0.4217	2.44	0.4033	2.36	0.5069	2.40
smoker	**-0.2562**	**-2.70**	**-0.2615**	**-2.85**	**-0.2182**	**-2.01**
index of drinking	**0.0946**	**2.70**	**-0.0077**	**-0.24**	*	*
change in drinking, 95-00	*	*	*	*	**-0.0609**	**-1.87**
observations	2405		2532		2532	
pseudo R^2	0.0286		0.0299		0.0299	

* omitted

Regression a: 1995 happiness, with smoking and drinking variables

Regression b: 2000 happiness, with smoking and drinking variables

Regression c: 2000 happiness, with change in drinking (1995-2000) substituted for index of drinking

Table 12: Effects of happiness on smoking and drinking

Dependent variable:	**quit smoking**		**start smoking**		**drinking in 2000**		**drinking in 2000**	
Condition:	(given smoker in 1995)		(given nonsmoker in 1995)					
Regression technique:	*logit*		*logit*		*ordered logit*		*ordered logit*	
	a		**b**		**c**		**d**	
Independent variables	coef	z	coef	z	coef	z	coef	z
age	-0.1342	-3.39	-0.0538	-1.60	0.0161	0.92	-0.0203	-0.82
age^2	0.0014	3.31	0.0000	-0.03	-0.0002	-0.99	0.0002	0.88
male	*-0.6333*	*-2.63*	1.7698	11.10	1.4992	17.80	1.1276	10.74
married	-0.0069	-0.07	-0.1909	-2.18	0.1043	2.14	0.0549	0.95
education level	0.3080	1.45	-0.1173	-0.62	-0.1178	-1.31	-0.1081	-1.01
minority	0.1427	2.34	-0.0835	-1.43	0.0170	0.65	0.0379	1.20
student	0.2827	1.24	-0.4233	-2.00	-0.09	-0.87	-0.0359	-0.28
retired	0.3348	0.26	-0.4082	-1.09	-0.17	-0.55	-0.6432	-1.08
housewife	*0.0336*	*0.10*	*-0.6679*	-1.84	-0.31	-2.12	-0.4731	-2.77
unemployed	0.7922	1.49	-0.6532	-1.35	-0.16	-0.69	-0.2246	-0.75
selfemployed	0.1334	0.53	0.4872	2.18	0.16	1.20	0.0685	0.42
log equiv income	-1.3952	-1.35	0.3464	0.66	0.7154	2.45	0.3681	1.13
health index	-0.3446	-0.92	-0.3765	-1.06	0.26	1.44	0.16	0.77
unexplained happiness, 95	**0.0396**	**0.47**	**-0.0023**	**-0.03**	**0.0575**	**1.56**	**0.0176**	**0.41**
index of drinking, 95	*	*	*	*	*	*	**0.5462**	**12.96**
constant	0.1769	0.14	1.9562	1.76	*	*	*	*
observations	1252		3205		2355		1685	
pseudo R-squared	0.0351		0.2183		0.0582		0.0868	

*Omitted

Regression a: Probability of quitting smoking, given that respondent was a smoker in 1995

Regression b: Probability of starting smoking, given that respondent was a nonsmoker in 1995

Regression c: Amount of drinking in 2000 (index 1-6)

Regression d: Amount of drinking in 2000, controlling for amount of drinking in 1995