

Obesity and Welfare Regimes

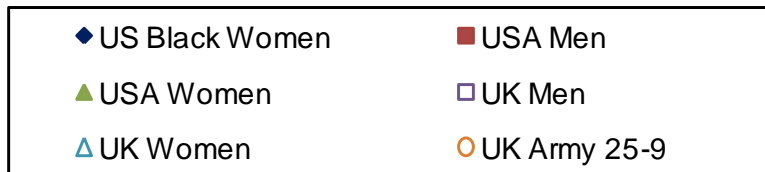
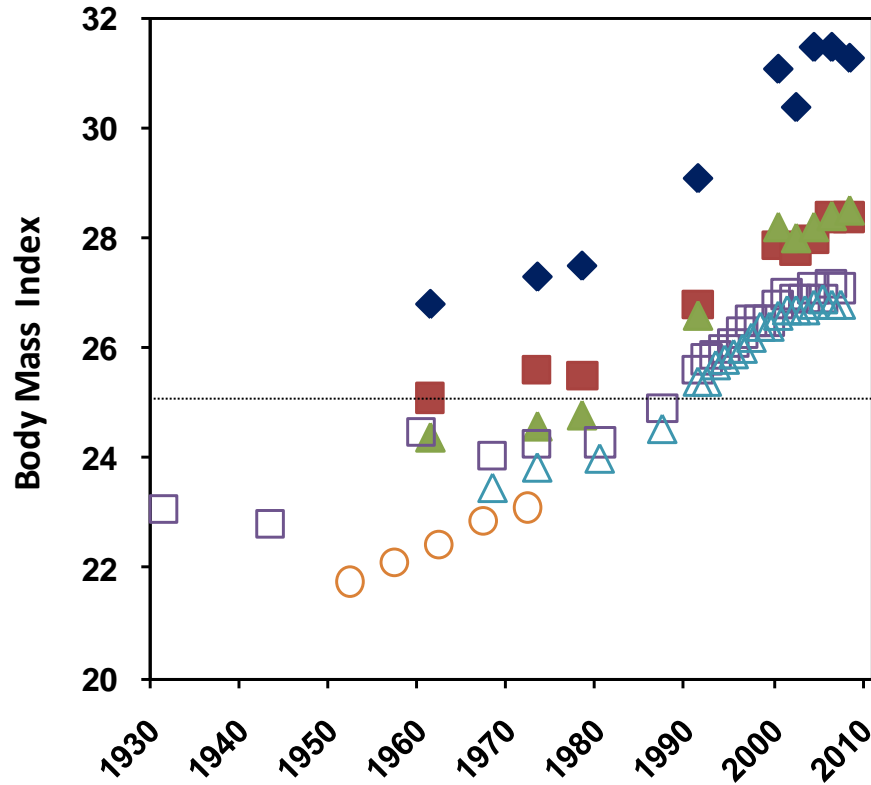
Avner Offer, Rachel Pechey, Stanley Ulijaszek

University of Oxford

21 November 2011

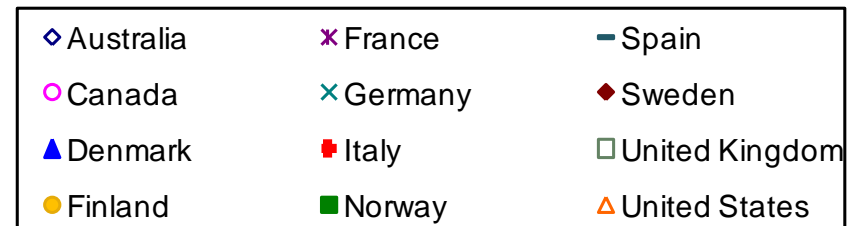
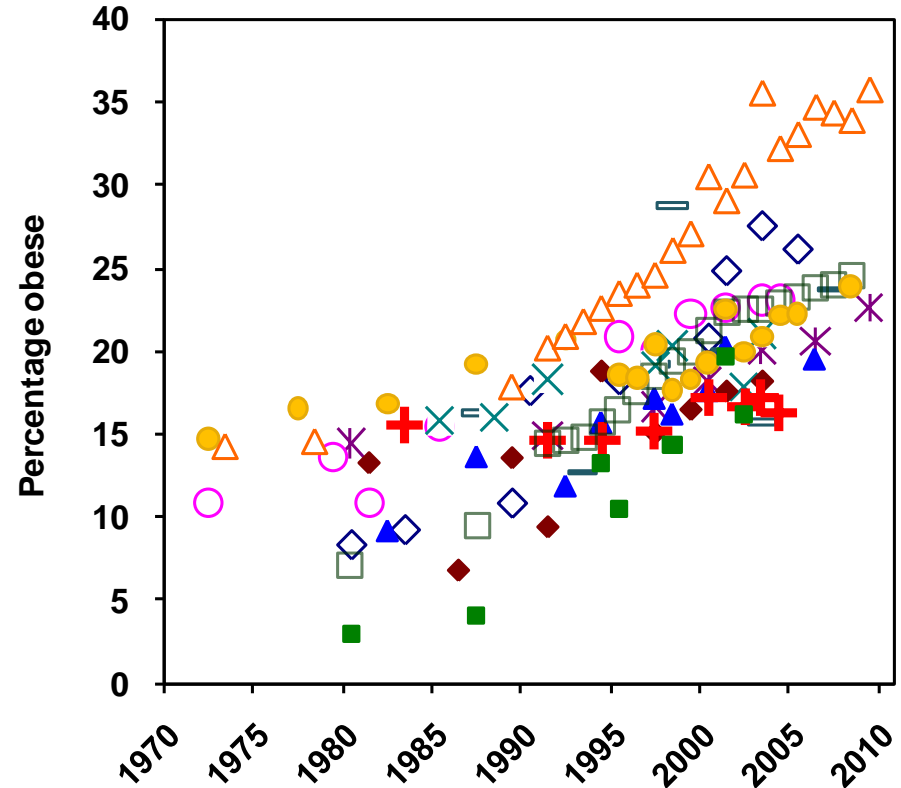
Historical novelty: Body-weight trends, c. 1930-2010

Mean BMI, USA & UK 1930-2010



BMI=weight (kg)/height (m²)

Obesity prevalence 1970-2010



BMI>30

Why should we care?

- Policy:
 - Individual health
 - Appearance norms
 - Discrimination
 - Economic costs
- Intellectual:
 - Rapid anthropometric change
 - Challenge for rational decision models
- Not to worry
 - Denial/Contrarian—no problem (Campos, 2004)
 - Libertarian—anything goes/not *my* problem
 - Chicago—market always right, so no problem (Philipson & Posner, 1999, 2008)

What to do? Nothing works?

Map 5

Full Generic Map
Thematic Clusters (filled)

Social Psychology

Individual Psychology

Food Production

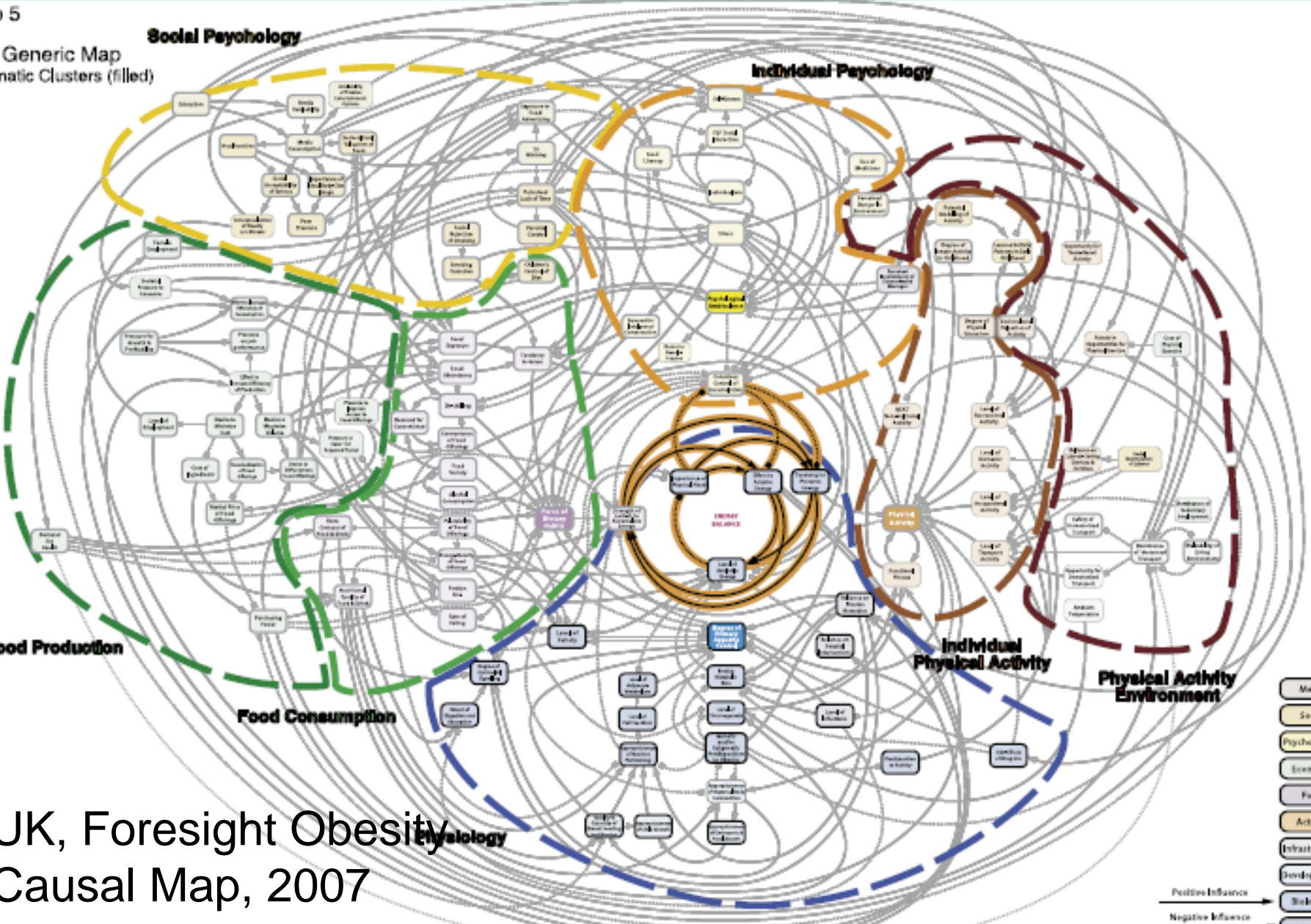
Food Consumption

Individual Physical Activity

Physical Activity Environment

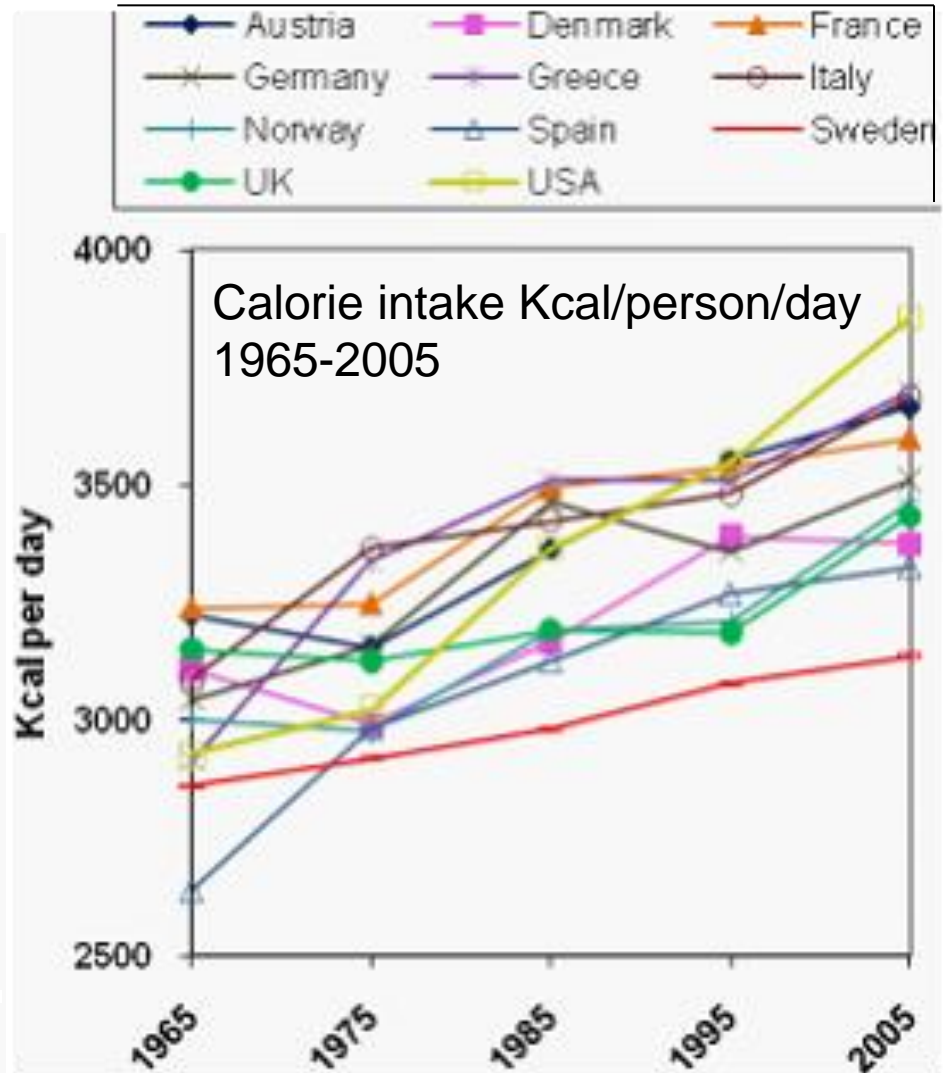
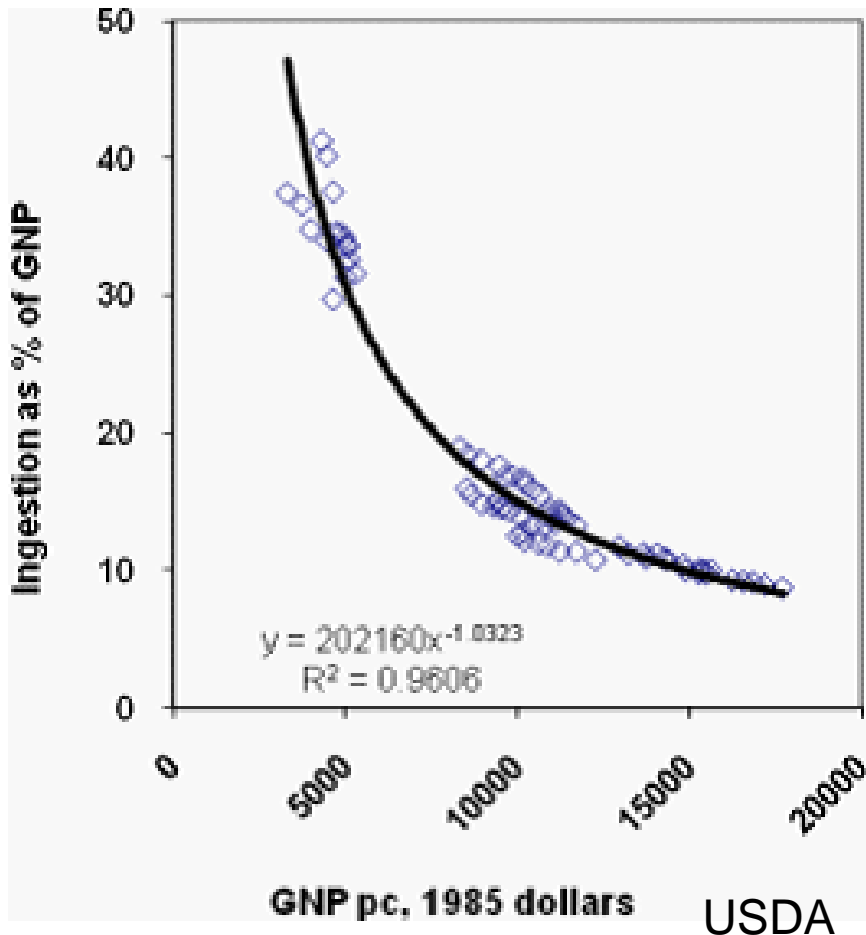
UK, Foresight Obesity
Causal Map, 2007

Physiology



Fast-food shock: price falls, consumption rises

Engel's Law, Portugal, Belgium, UK, USA, 1970-1988



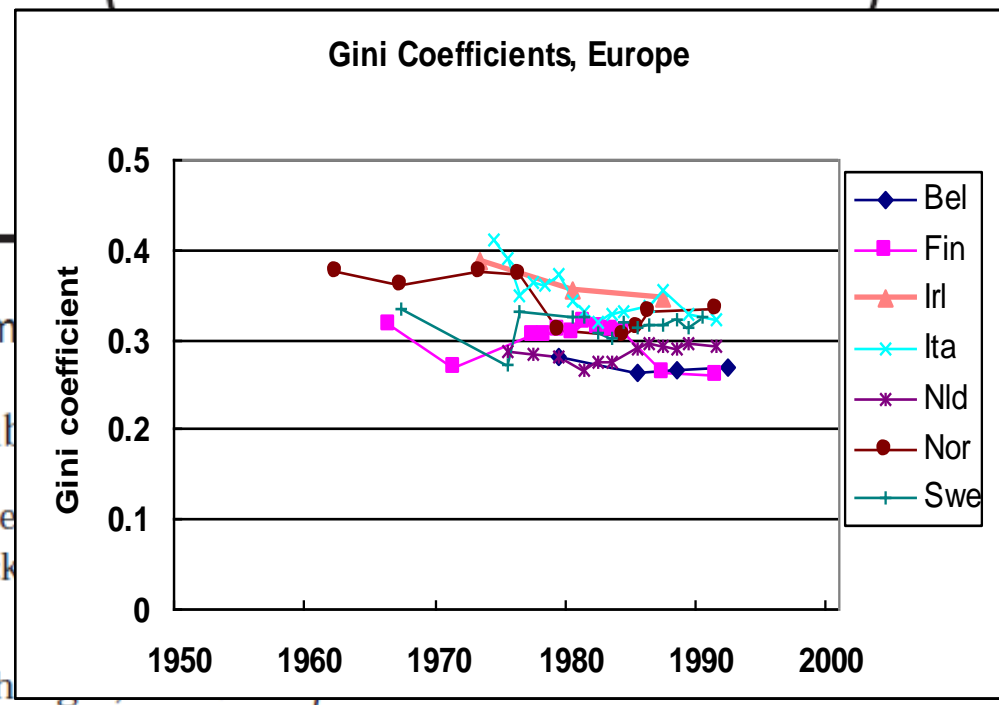
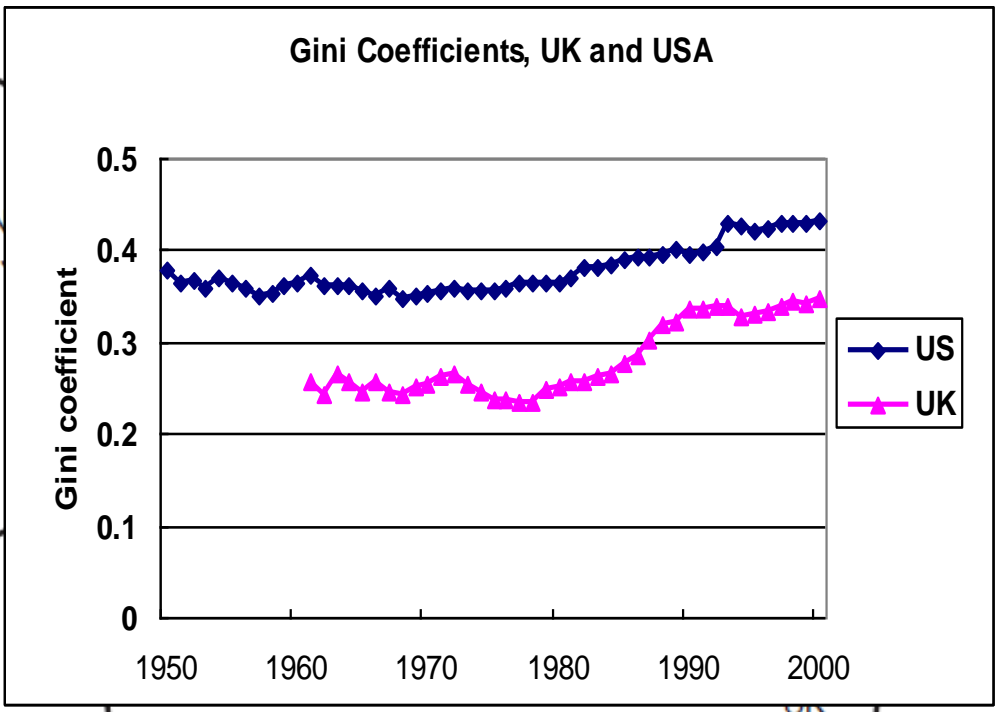
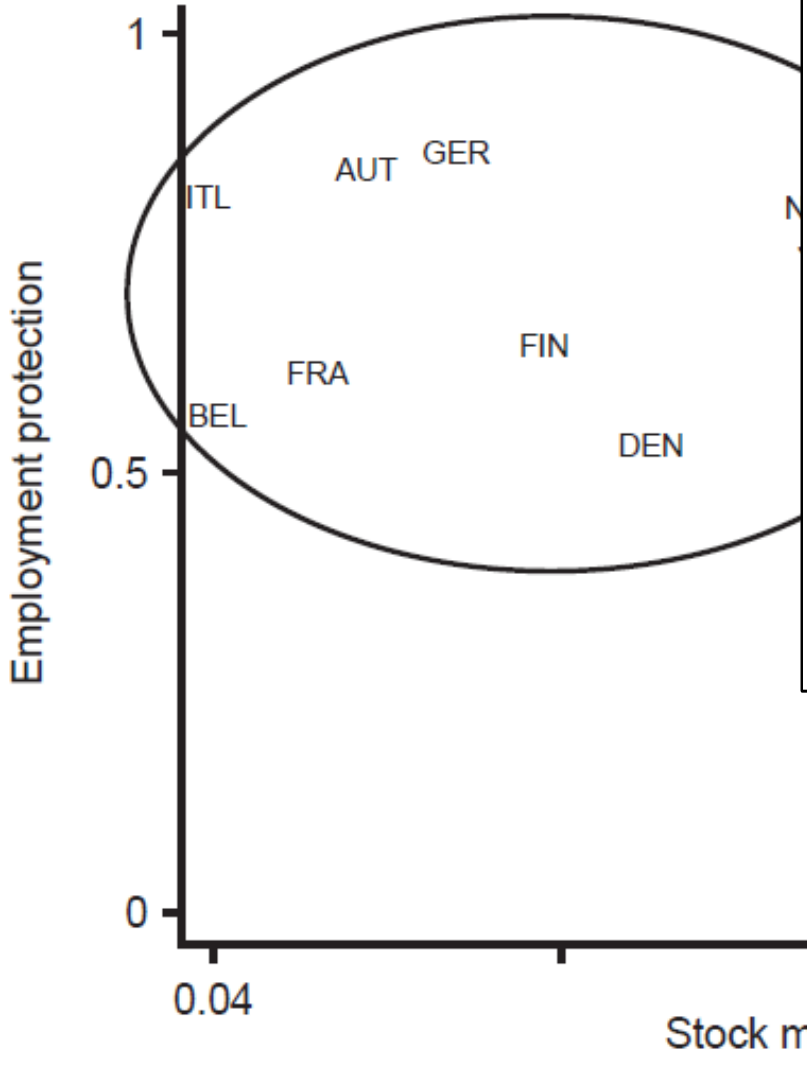


FIG. 1.1 Institutions across sub

Note: Employment protection refers to the index by Abe, Iversen, and Soskice in this volume. Stock market activity is measured as the value of domestic companies as a percentage of GDP.

Source: International Federation of Stock Exchanges

Obesity: A response to insecurity?

- Animal behaviour: high food availability variance associated with weight gain (Smith, 2009)
- Humans: eating a form of self-medication (“comfort eating”)
 - **Forms of Insecurity:**
 - ***Dependence:*** family, health, income insecurity
 - ***Employment:*** employment, rights, skills, etc.
 - Hunger trends in USA (14.6 % (17m) households experienced food shortage 2008) (USDA, 2009). 49 million households ‘lacked consistent access to adequate nutrition’.
 - Obesity and hunger hotspots coincide.
 - USDA: ‘Hunger’ renamed ‘Food Insecurity’.
 - Consistent with obesity socio-economic gradient (Drewnowski, 2012)
- Wilkinson and Pickett, *The Spirit Level* (2009), Marmot, *Status Syndrome* (2004)
 - Inequality, Subordination

Evidence of Stress

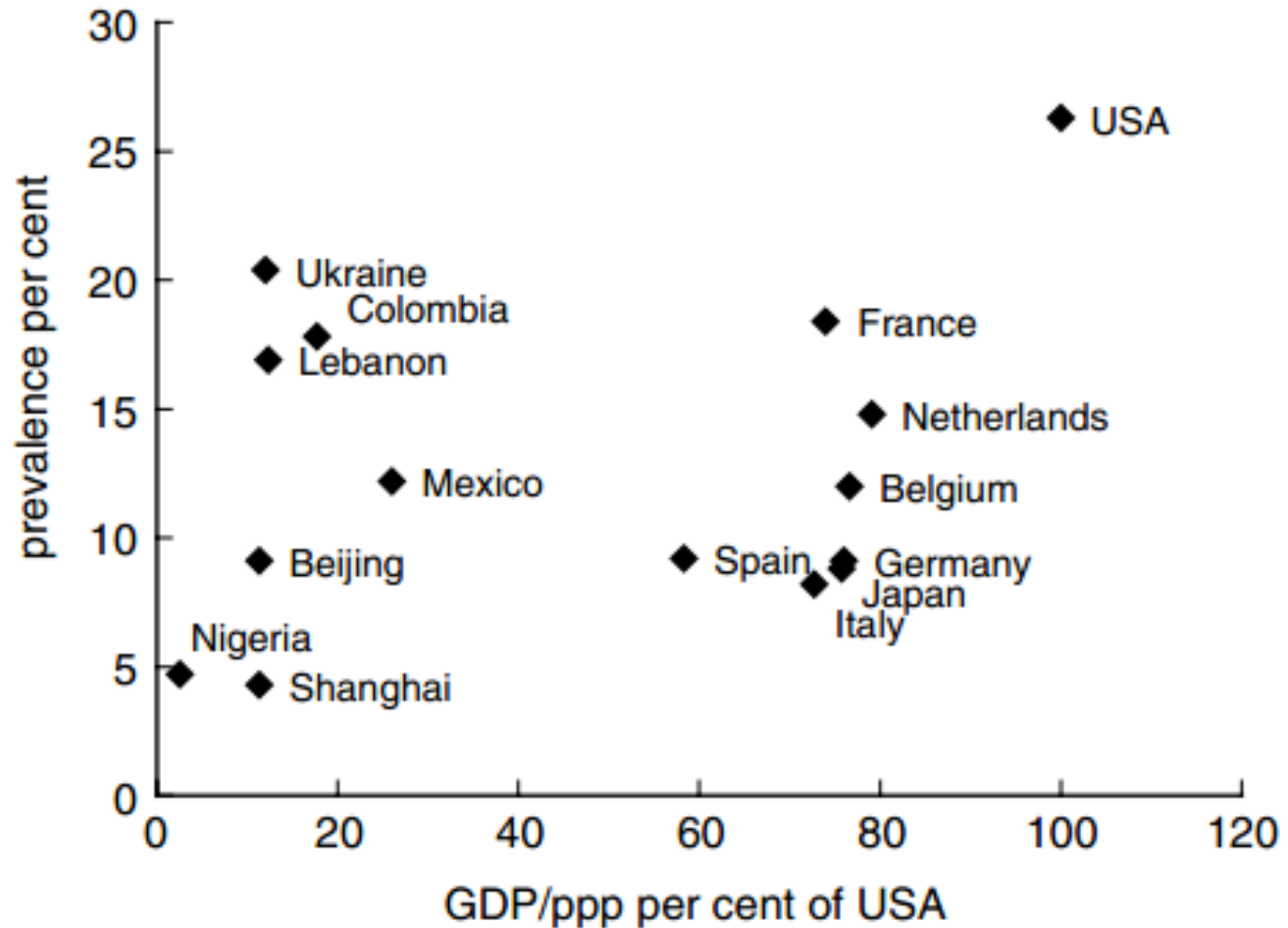


Fig. 14.2. Prevalence of mental disorders within twelve months, 2001-7. Offer (2006)

Source: Demyttenaere et al., 'Prevalence, Severity', table 3, p. 2585.

Obesity and welfare regime: three hypotheses

- a. **Supply shock.** Decline of physical exercise, increasing access to cheaper, pre-processed, high-energy-density appetising food.
- b. **Response to Stress**
 - 1. **Inequality stress.** Subordination is stressful
 - 2. **Insecurity stress**

Market liberal societies have more competitive labour and product markets, are less secure and more unequal. Fast food cheaper, less regulated

Offer, Pechey, Ulijaszek, 'Obesity Under Affluence varies by Welfare Regimes: The Effect of Fast Food, Insecurity and Inequality', *Economics and Human Biology*, vol. 8, 2010, 297-308`

Offer, Pechey, Ulijaszek (eds.) *Insecurity, Inequality and Obesity* (British Academy & OUP, forthcoming 2012)

Meta-analysis: Obesity prevalence

- Ninety-six surveys, 1994-2004
- Eleven countries: **Australia, Canada, UK, USA, Finland, France, Germany, Italy, Norway, Spain, Sweden**
- Obesity prevalence: % with BMI > 30 [BMI=kg/m²]
- Analysis: Ecological OLS regression, weighted (each country one unit)

Type	Number	Min. %	Max. %	Mean %
Market-liberal	46 (29 self-report)	11.0 (UK)	33.4 (US)	25.52
Non market-liberal	49 (35 self-report)	4.9 (Norway)	32.3 (Italy)	19.17

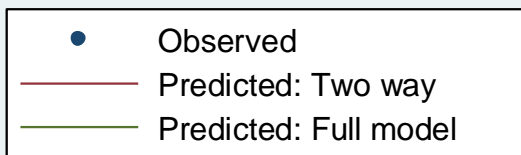
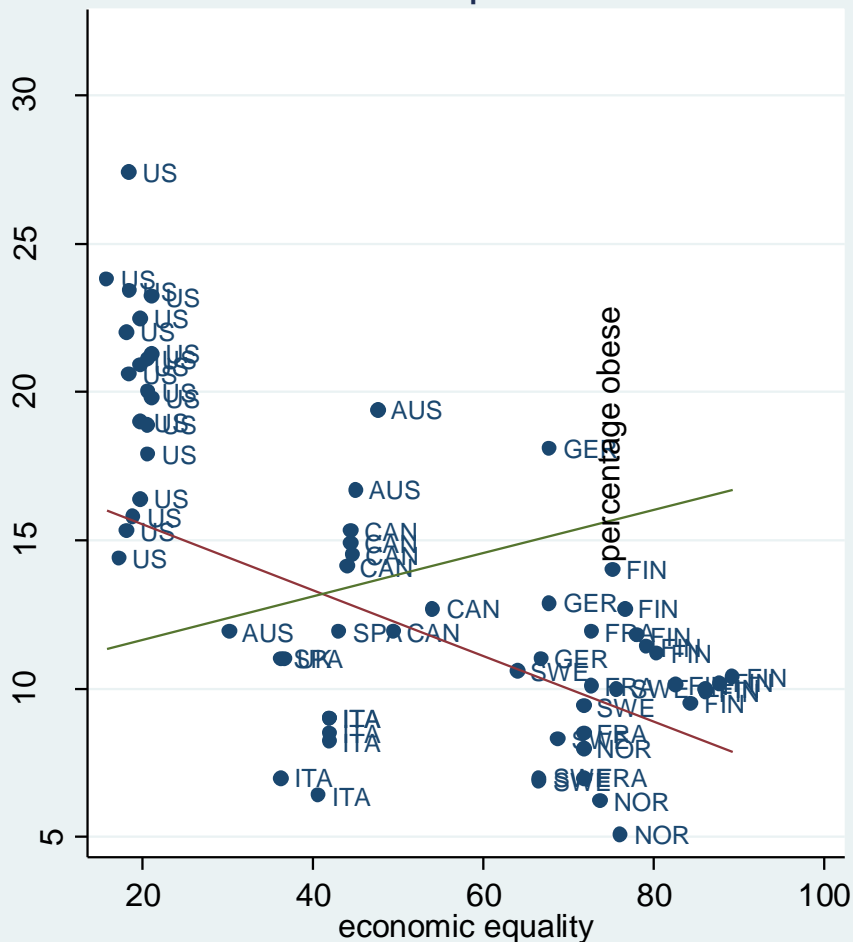
<i>OBESITY%</i>	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
MEASURED	9.093**	7.965**	9.643**	9.143**	7.832**	9.493**
<i>t-statistic</i>	(6.849)	(9.761)	(8.993)	(6.835)	(9.634)	(8.631)
beta	0.646	0.670	0.687	0.650	0.659	0.676
MARKETLIB	4.106**	3.101**	2.120	3.593*	2.667*	1.853
<i>t-statistic</i>	(2.667)	(2.745)	(1.316)	(2.506)	(2.635)	(1.289)
beta	0.327	0.271	0.157	0.286	0.233	0.137
TIME	0.477**	0.539**	0.465**	0.522**	0.558**	0.460**
<i>t-statistic</i>	(4.133)	(4.796)	(3.349)	(4.488)	(5.207)	(3.105)
beta	0.222	0.279	0.204	0.243	0.290	0.202
ECONSECURITY	-0.279**	-0.262**	-0.262**	-0.266**	-0.244**	-0.247**
<i>t-statistic</i>	(-8.995)	(-7.857)	(-6.904)	(-8.623)	(-8.497)	(-7.227)
beta	-0.718	-0.742	-0.630	-0.684	-0.691	-0.594
ECONEQUALITY	0.0726**	0.0434	0.0124			
<i>t-statistic</i>	(2.872)	(1.376)	(0.291)			
beta	0.261	0.170	0.0412			
INVERSE-GINI				0.0528*	0.0226	-0.00304
<i>t-statistic</i>				(2.575)	(0.867)	(-0.0859)
beta				0.201	0.0946	-0.0108
CONSTANT	22.29**	22.95**	25.14**	22.92**	23.17**	25.12**
<i>t-statistic</i>	(6.935)	(10.55)	(8.185)	(7.444)	(10.94)	(8.653)
Observations	88	88	88	88	88	88
Adjusted R-squared	0.824	0.779	0.730	0.821	0.775	0.729

Robust t-statistics in parentheses

** p<0.01, * p<0.05

Figure 3. Obesity and economic equality

Self-reported



Measured

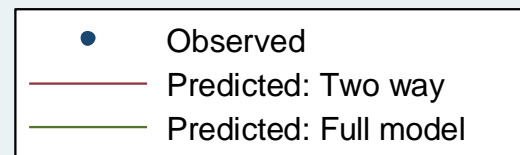
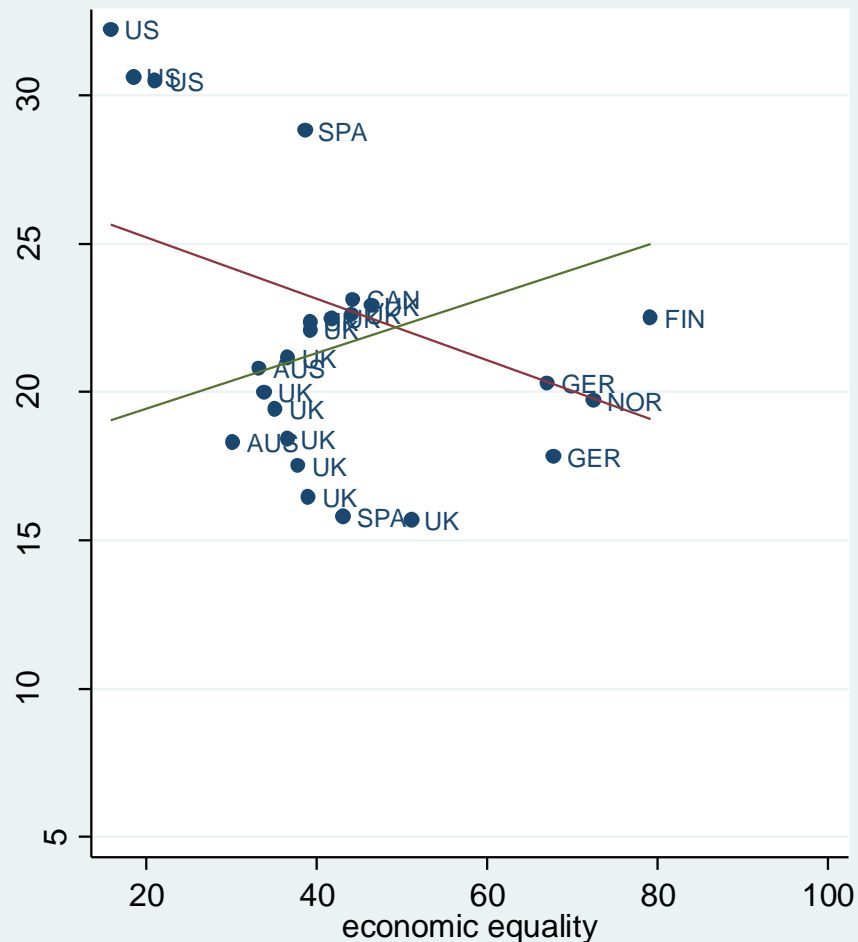
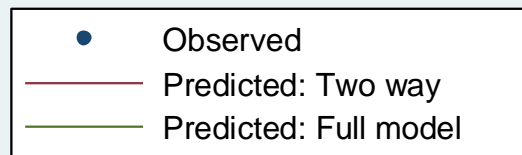
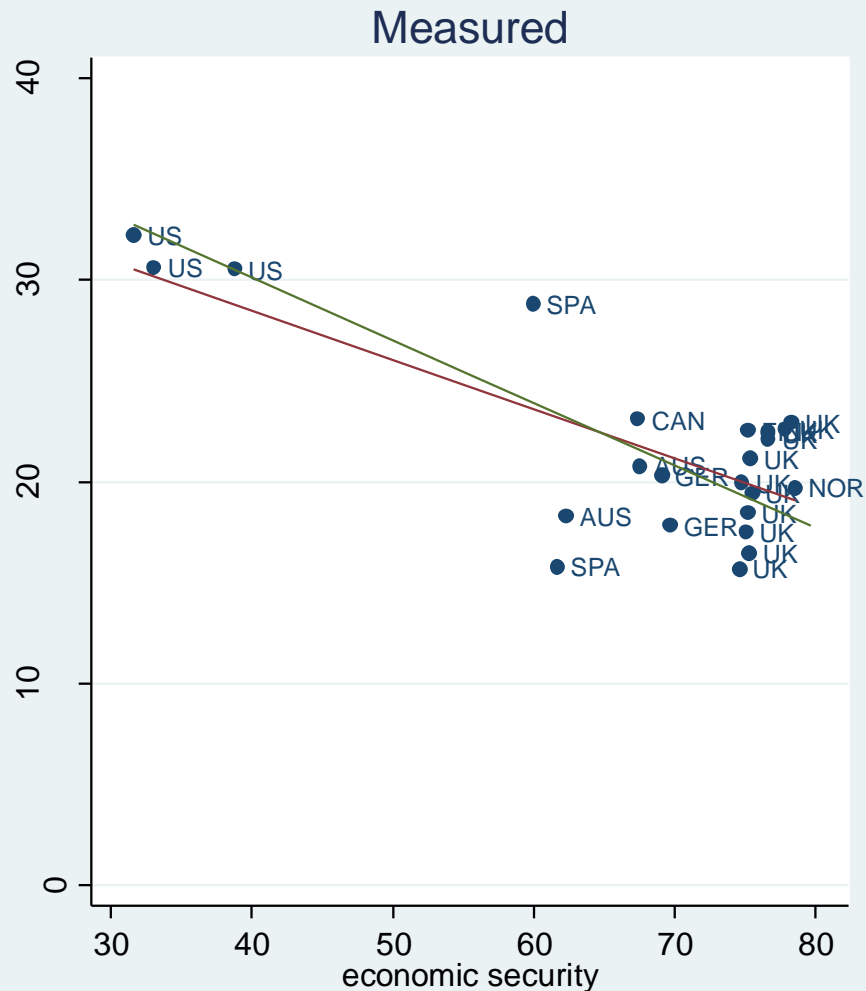
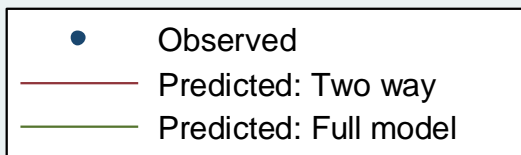
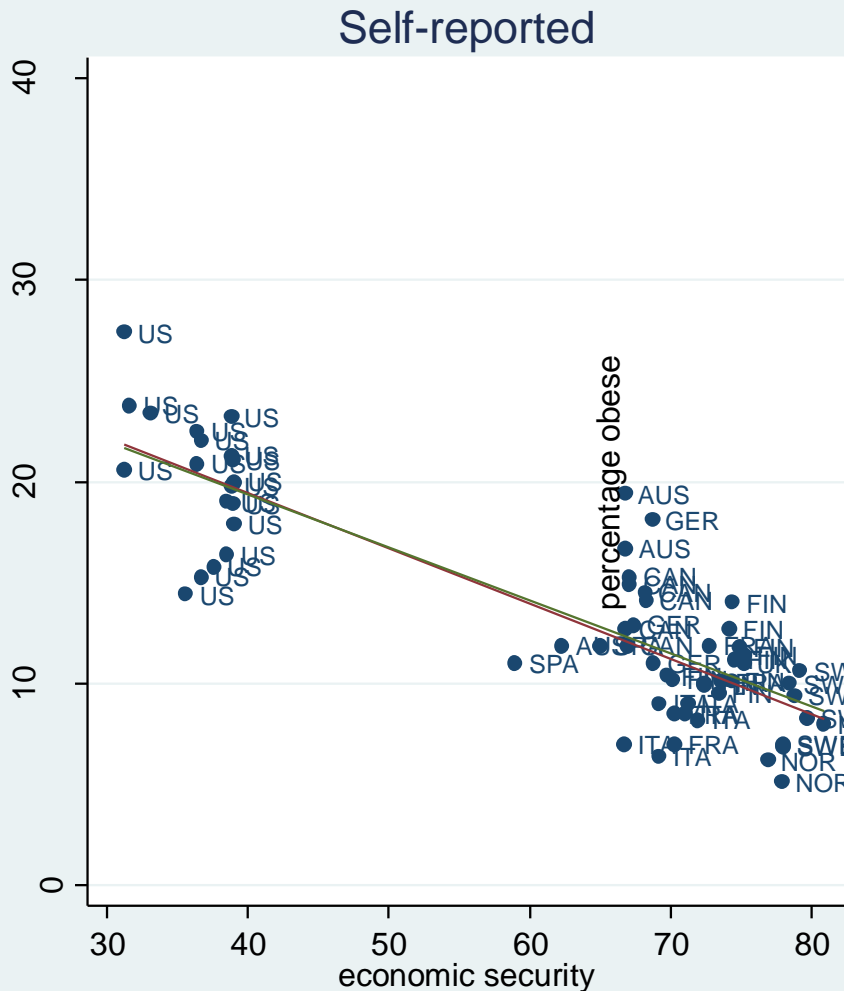


Figure 2. Obesity and economic security



Decomposing Dependency Security

Source: Lars Osberg, 'Measuring Economic Security and Insecure Times: New Perspectives, New Events, and the Index of Economic Well-Being', (Ottawa, 2009)

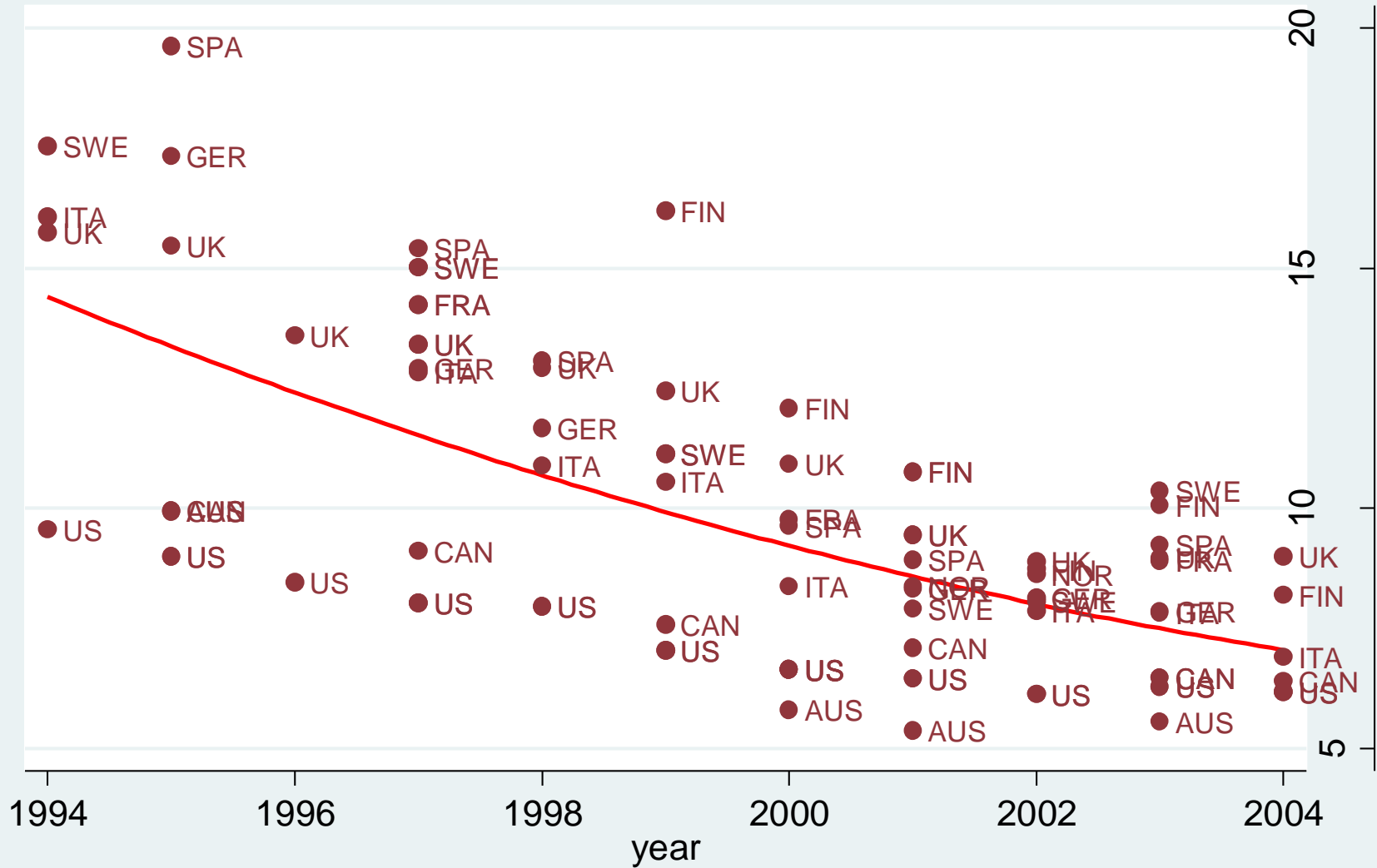
[data from Luxembourg Household income study]

OBESITY%	MALE excl. USA	FEMALE excl. USA	TOTAL	TOTAL
MEASURED	7.487**	9.377**	8.853**	8.720**
<i>t</i> -statistic	(9.456)	(8.277)	(6.298)	(5.946)
<i>beta</i>	0.715	0.751	0.629	0.620
TIME	0.533**	0.440**	0.348*	0.507**
<i>t</i> -statistic	(3.867)	(2.772)	(2.369)	(3.287)
<i>beta</i>	0.306	0.212	0.162	0.236
MARKETLIB	2.382**	1.932	3.105**	
<i>t</i> -statistic	(3.077)	(1.792)	(3.082)	
<i>beta</i>	0.218	0.149	0.247	
UNEMPLOYMENT			0.247*	-0.253*
<i>t</i> -statistic			(2.078)	(-2.276)
<i>beta</i>			0.201	-0.206
MEDICAL-EXP			-0.221**	
<i>t</i> -statistic			(-2.830)	
<i>beta</i>			-0.498	
SINGPARENT			-0.275	
<i>t</i> -statistic			(-0.995)	
<i>beta</i>			-0.152	
OLDAGE			0.0867	
<i>t</i> -statistic			(0.485)	
<i>beta</i>			0.0453	
ECONSECURITY	-0.272**	-0.269*		
<i>t</i> -statistic	(-3.208)	(-2.276)		
<i>beta</i>	-0.283	-0.234		
CONSTANT	26.69**	26.67**	13.40**	14.38**
<i>t</i> -statistic	(4.545)	(3.151)	(4.819)	(5.683)
Observations	66	66	88	88
Adjusted R-squared	0.738	0.689	0.775	0.547

robust *t*-statistics in parentheses

** $p < 0.01$, * $p < 0.05$

Big Mac Relative Price (price/GDPpc)



— Fitted values ● Big Mac relative price

Economist

'Food Shock'—Catch-up hypothesis: Levels vs. Changes

OBESITY%	TOTAL (market-liberal)	TOTAL (non-market-liberal)	TOTAL	TOTAL (market-liberal)	TOTAL
MEASURED	7.357**	10.03**	8.761**	6.256**	9.196**
<i>t-statistic</i>	(10.50)	(5.268)	(7.247)	(5.237)	(7.740)
beta	0.761	0.740	0.652	0.647	0.684
MARKETLIB					4.228**
<i>t-statistic</i>					(3.208)
beta					0.340
TIME	0.743**	0.276	-0.318	0.387*	0.449**
<i>t-statistic</i>	(7.804)	(1.520)	(-1.839)	(2.065)	(2.996)
beta	0.464	0.167	-0.149	0.242	0.211
ECONSECURITY	-0.194**	-0.192			-0.290**
<i>t-statistic</i>	(-10.11)	(-1.863)			(-8.724)
beta	-0.741	-0.207			-0.778
ECONEQUALITY					0.0886**
<i>t-statistic</i>					(3.009)
beta					0.298
BIG-MAC			-0.0821**	-0.0668**	0.00252
<i>t-statistic</i>			(-4.944)	(-3.193)	(0.177)
beta			-0.424	-0.393	0.0130
CONSTANT	22.85**	21.77**	22.71**	19.51**	22.16**
<i>t-statistic</i>	(17.50)	(2.951)	(8.870)	(7.841)	(8.205)
Observations	47	41	81	47	81
Adjusted R-sq	0.852	0.699	0.601	0.563	0.814

robust t-statistics in parentheses

** p<0.01, * p<0.05

Economic Security at Work

Source: International Labour
Office, *Economic Security
for a Better World* (Geneva,
2004).

<i>OBESITY%</i>	TOTAL	TOTAL (market-liberal)	TOTAL	TOTAL
MEASURED	8.424**	5.687**	8.050**	7.881**
<i>t-statistic</i>	(7.017)	(8.616)	(6.005)	(6.144)
<i>beta</i>	0.599	0.588	0.572	0.560
TIME	0.385*	0.729**	0.391**	0.408**
<i>t-statistic</i>	(2.405)	(7.489)	(3.448)	(4.064)
<i>beta</i>	0.179	0.455	0.182	0.190
LAB-MARKET			-0.0606	
<i>t-statistic</i>			(-0.430)	
<i>beta</i>			-0.0843	
EMPLOYMENT			0.00396	
<i>t-statistic</i>			(0.0528)	
<i>beta</i>			0.00906	
JOB			0.0271	
<i>t-statistic</i>			(0.422)	
<i>beta</i>			0.0388	
SKILLS			0.881**	0.768**
<i>t-statistic</i>			(5.087)	(7.126)
<i>beta</i>			0.723	0.631
WORK			0.0397	
<i>t-statistic</i>			(0.335)	
<i>beta</i>			0.0663	
REP-RIGHTS			-0.306**	-0.279**
<i>t-statistic</i>			(-4.072)	(-11.64)
<i>beta</i>			-0.749	-0.683
INCOME			-0.400**	-0.360**
<i>t-statistic</i>			(-2.817)	(-5.210)
<i>beta</i>			-0.437	-0.393
ECONSEC-ILO	-0.195**	-0.399**		
<i>t-statistic</i>	(-5.275)	(-8.037)		
<i>beta</i>	-0.387	-0.593		
CONSTANT	24.95**	40.28**	-5.922	-1.649
<i>t-statistic</i>	(7.832)	(11.98)	(-0.977)	(-0.406)
Observations	88	47	88	88
Adjusted R-squared	0.623	0.810	0.797	0.800

robust t-statistics in parentheses

** p<0.01, * p<0.05

Deeper questions

- Stress unobservable – obesity is. Provides visible measure of insecurity.
- No effective interventions available?
 - ‘Better fat than red’? too much to give up? Like climate change denial? Peak oil denial?
- Welfare regime only a proxy?
 - Why are countries different? Path dependence?
 - Distinctive cultures:
 - High obesity: English speaking/Individualist
 - Low obesity: Scandinavian/Communitarian
- Explanations for exposure/response/ resilience deep in the past?
- Requires historical socio-cultural explanation?
- The positive claims of market liberalism are offset by unmeasured costs to personal and public health
- Some reasons for hope

Policy focus on individual choice

- ‘Personal Responsibility Crusade’ – shift onus/risk onto individual.
- Part of larger neoliberal agenda.
- Assumption that individuals maximise utility using all available information
 1. If correct, obesity a benign consequence of informed choice
 2. But concurrent view of obesity as moral failure. Knowledge or will?
- Individual’s task is to resist fast-food marketing
- Corporations don’t want them to succeed
- Governments don’t want to upset corporations
- Implications: Business as usual
- Policy implication: Change incentives
- e.g. Dubois, Griffith, Nevo ‘Demand for Nutrients: A cross-country Comparison’ (2011)
- Econometrically model demand for food in France and USA. French prices higher. Counterfactual model of USA demand with French prices.
- Implication: changing incentives by taxing harmful foods.

Interventions

- Taking vending machines out of schools
- New York trans-fat prohibition
- Danish fat tax
- UK traffic-light food labelling proposals
- Fightback by fast-food corporations
- Regulatory capture

McDonald's and PepsiCo to help write UK health policy

Exclusive: Department of Health putting fast food companies at heart of policy on obesity, alcohol and diet-related disease

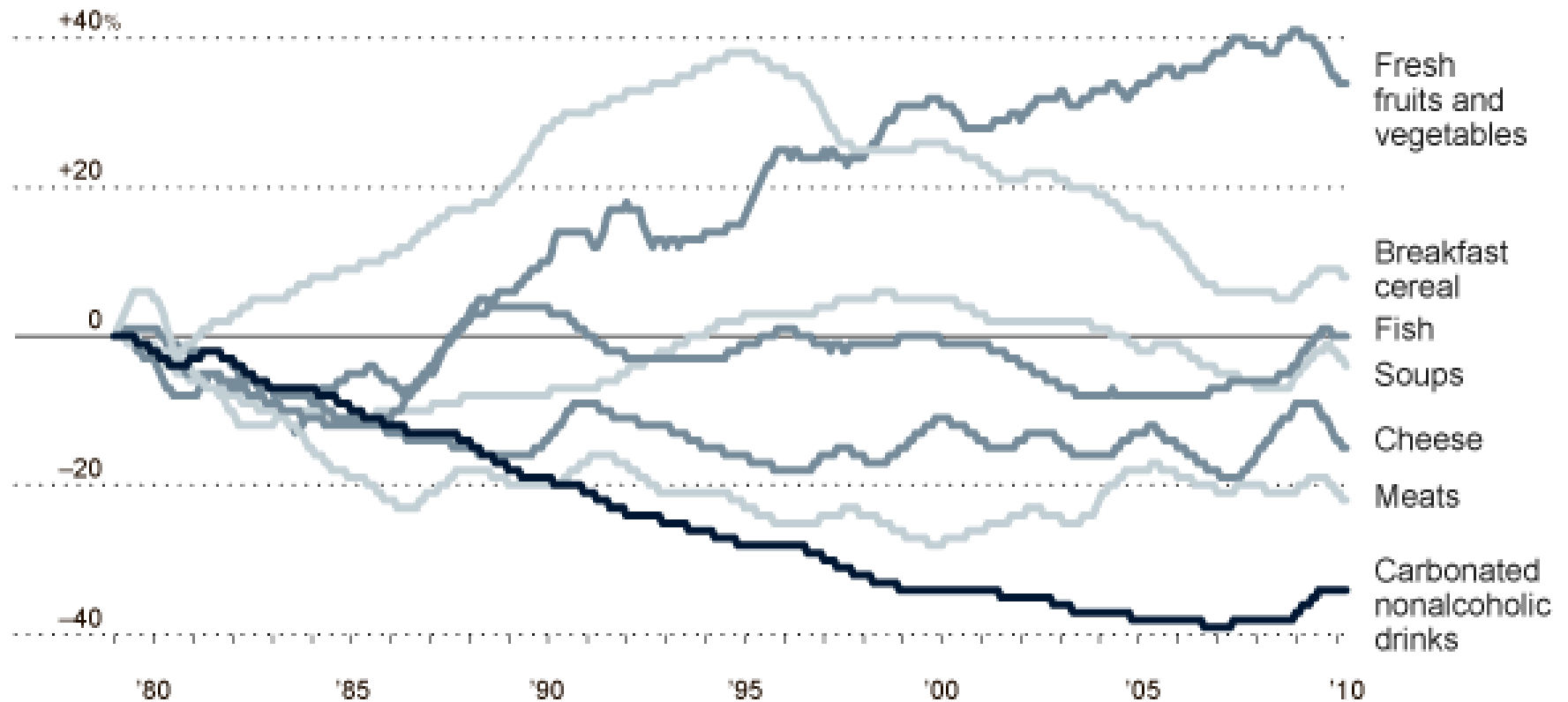
Felicity Lawrence

guardian.co.uk, Friday 12 November 2010 22:00 GMT

A [larger](#) | [smaller](#)



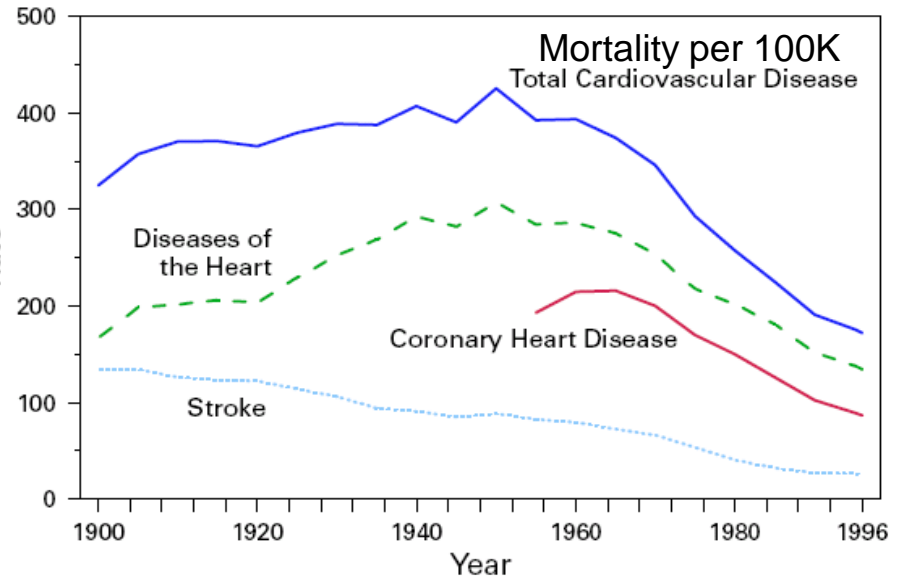
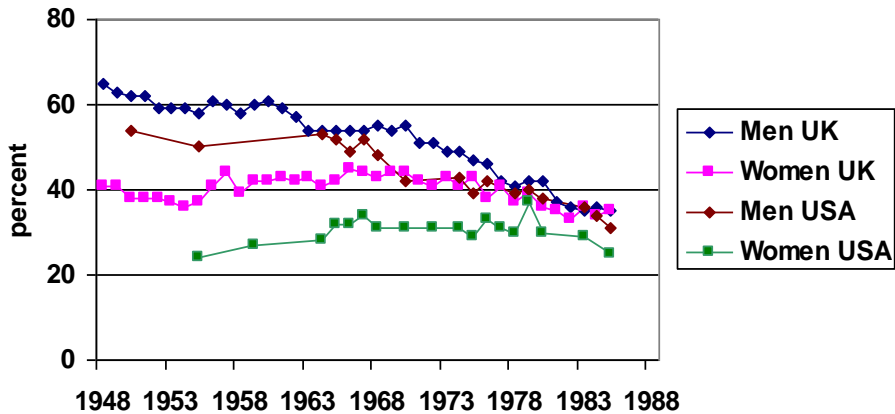
Change in price of items since 1978, relative to overall inflation, as measured by the Consumer Price Index. The price of carbonated drinks, for example, has fallen 34 percent relative to all other prices.



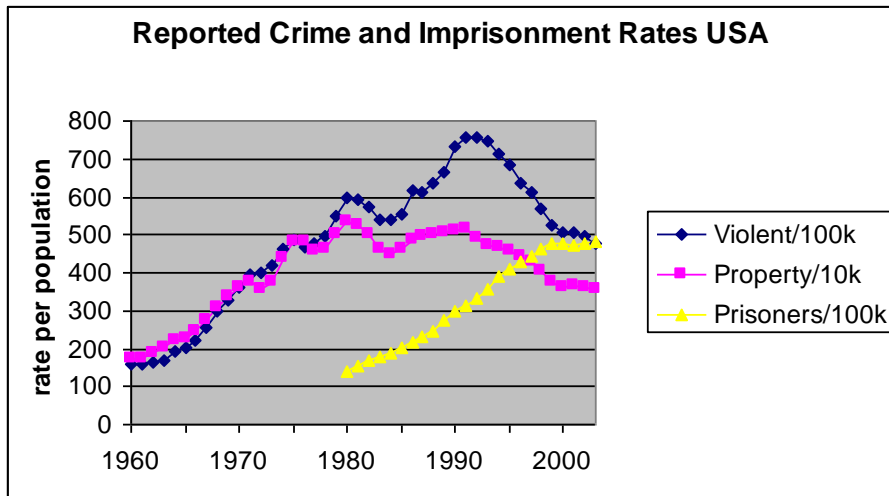
David Leonhardt, 'The Battle over Taxing Soda', *NYT*, 18 May 2010

Trajectories of social pathologies

Percentage Smoking Cigarettes, UK & USA

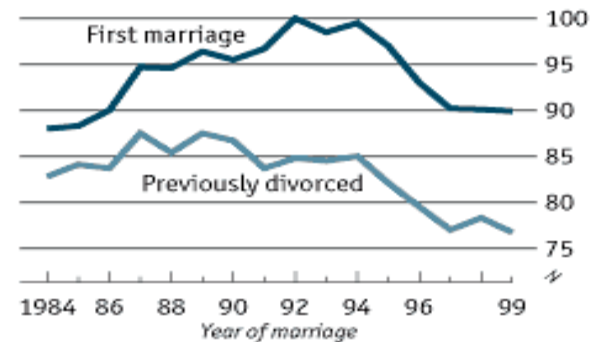


Reported Crime and Imprisonment Rates USA



Second time lucky

Marriages ending in divorce within four years
Per 1,000 marriages, men

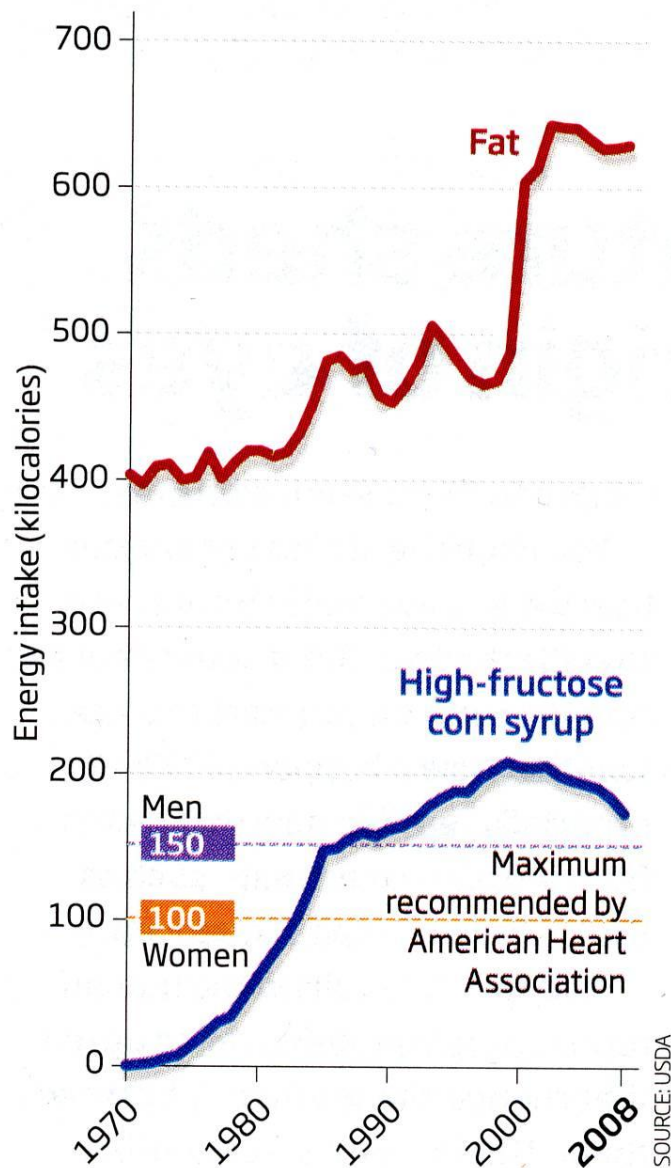


Sources: DNS; The Economist

Andy Coghlan, 'Food, not flab, is the real killer'
New Scientist, 13 March 2010, 9

Killer diets

The average daily intake of fat and sugar by a person in the US has greatly increased since 1970



A social learning process

- Learn how social pathologies are overcome
- Objective is not greater knowledge, but bringing obesity under control.
- Gradual process of social learning. Personal & social action
- Science, social science, regulation, education, voluntary compliance, compulsory compliance.
- Strategy implied:
- Magic bullet? Viagra. Physiological/pharmacological/medical research
- **Broad front activity:**
 - Research
 - Physiological
 - Psychological
 - Social
 - Regulation
 - E.g. taxation
 - Restrictions on marketing, e.g. labelling, advertising [cigarettes!]; children
 - Public health
 - Identifying vulnerable groups?
 - ‘Healthy food’ subsidies?

Generate urgency

- Send society a signal: Good signal is difficult to make and difficult to fake.
- Signal **needs** to be costly
- The salience of signals communicates need for personal and social action.
- NIH strategy. Scores of activities
- Ask explicitly: what leverage? Small for any individual measure.
- A social learning commission:
 - Invite bottom-up initiatives. Open competition for funds. FAHRE. Not 'co-ordinated' top-down, but bottom-up.
 - Because not clear what is going to work. Sum of activity?
 - Some countries more open to interventions
 - Europe in general better-off than Anglo-sphere
 - But: If economic growth does not resume
 - Less funds
 - More obesity
- Educate governments on costs of economic insecurity, to set off against purported economic dynamism of market orientation.