

# A COMPARISON OF SUBJECTIVE WELL-BEING AND GENERIC PREFERENCE-BASED MEASURES OF HEALTH

Chris Sampson

evidence from the BHPS

# Plan



- Introduction
- Literature
  - ▣ Potential differences
- Methods
  - ▣ Determinants
  - ▣ Responsiveness
- Results
- Discussion

# Introduction

- EQ-5D + TTO = QALY
  - ▣ Lots of problems
- Alternative?
  - ▣ Capabilities
  - ▣ Subjective well-being
    - Happiness?



# Introduction

- What is subjective well-being?
  - ▣ Happiness
  - ▣ Quality of life
  - ▣ Satisfaction with life
- Is it appropriate in health care?
  - ▣ Why not?
    - Extra-welfarism?
- Policy implications of its use
  - ▣ Are there any?

# Literature

- Debate for/against its use
  - Belief that it would give different results
    - Would it?
- 3 reasons for potential difference
  - What is valued
  - How it is valued
  - Who values it

# Literature

## □ What is valued

### □ Current

#### ■ HRQoL

- Pain / physical limitations / psychiatric concerns

### □ SWB

#### ■ QoL

- Freedom? / strength of relationships? / achievement?

#### ■ Wider impacts

- Health of others

Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.



# Literature

## □ How it is valued

### □ Current

- Expected utility
- Fixed time dimension
- Focusing

### □ SWB

- Experienced utility
- Lifetime perspective
  - Consideration of past and future states
- No focusing

# Literature

---

- Who values it
  - Current
    - Public preferences
  - SWB
    - Individual experience



# Literature

- No real difference
  - ▣ Much overlap between HRQoL and QoL
    - Role functioning in SF-6D
    - Happiness/depression
    - Double-counting?

# Methods

- Data
  - British Household Panel Survey
  - 15,000 individuals
  - Waves 6-10, 12-18 include:

*“How dissatisfied or satisfied are you with your life overall?”*

# Methods

---

- Data
  - No EQ-5D
  - Waves 9 and 14 include SF-36
  - Convert to SF-6D
    - Very similar to EQ-5D

# Methods

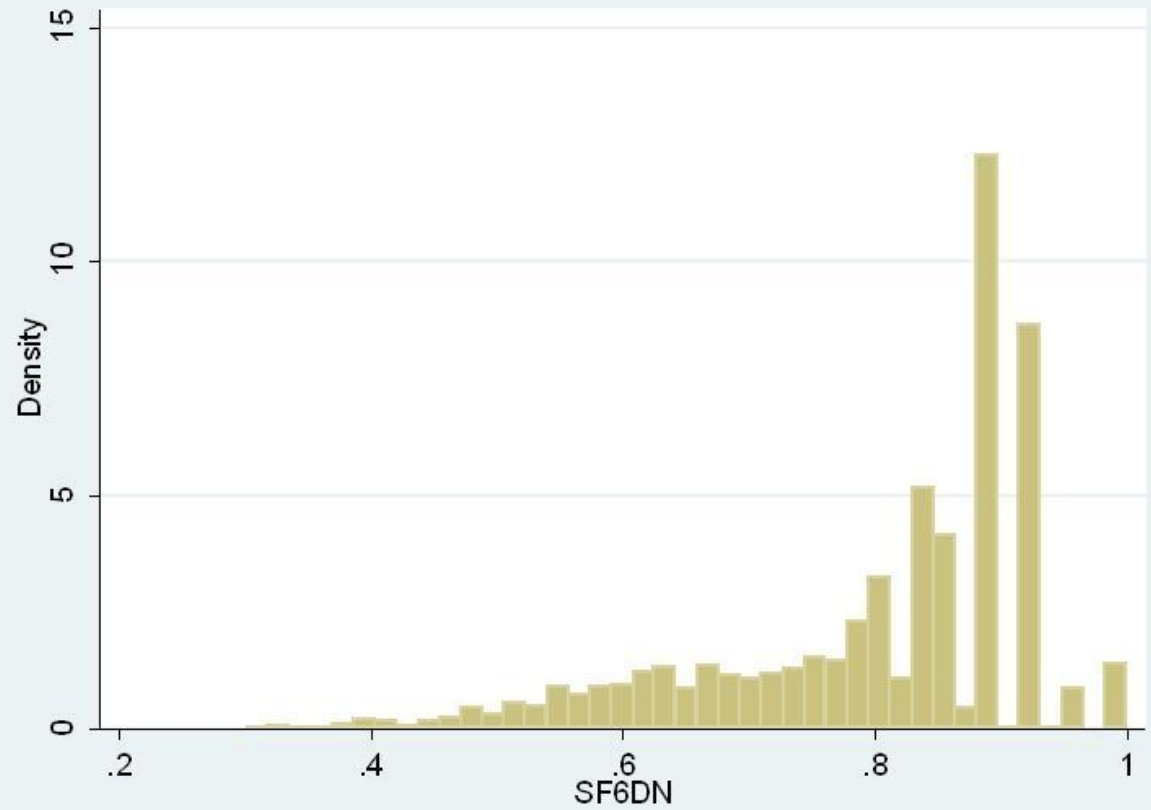
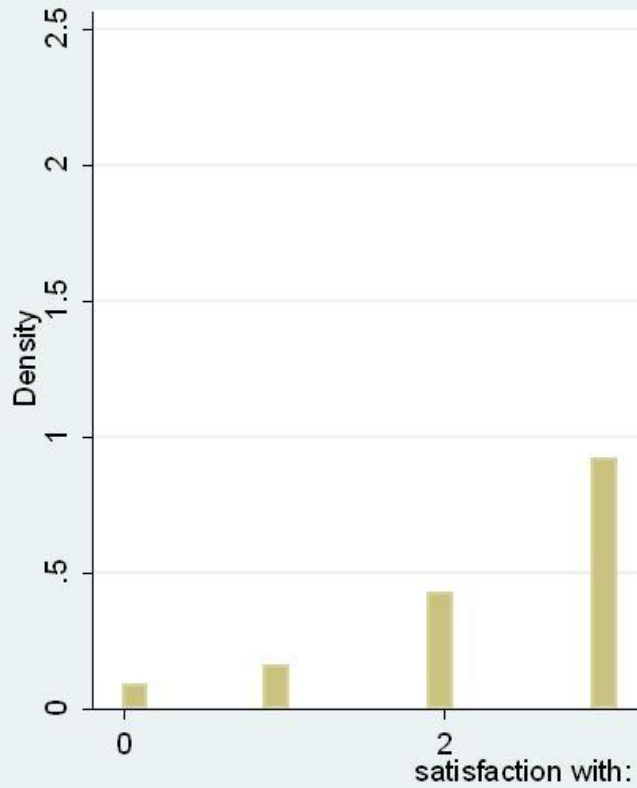
- Determinants of SWL / SF-6D
  - Choice of variables guided by Dolan et al (2008)
  - Cross-sectional (wave 14)
  - SWL: ordered probit
  - SF-6D: tobit

# Methods

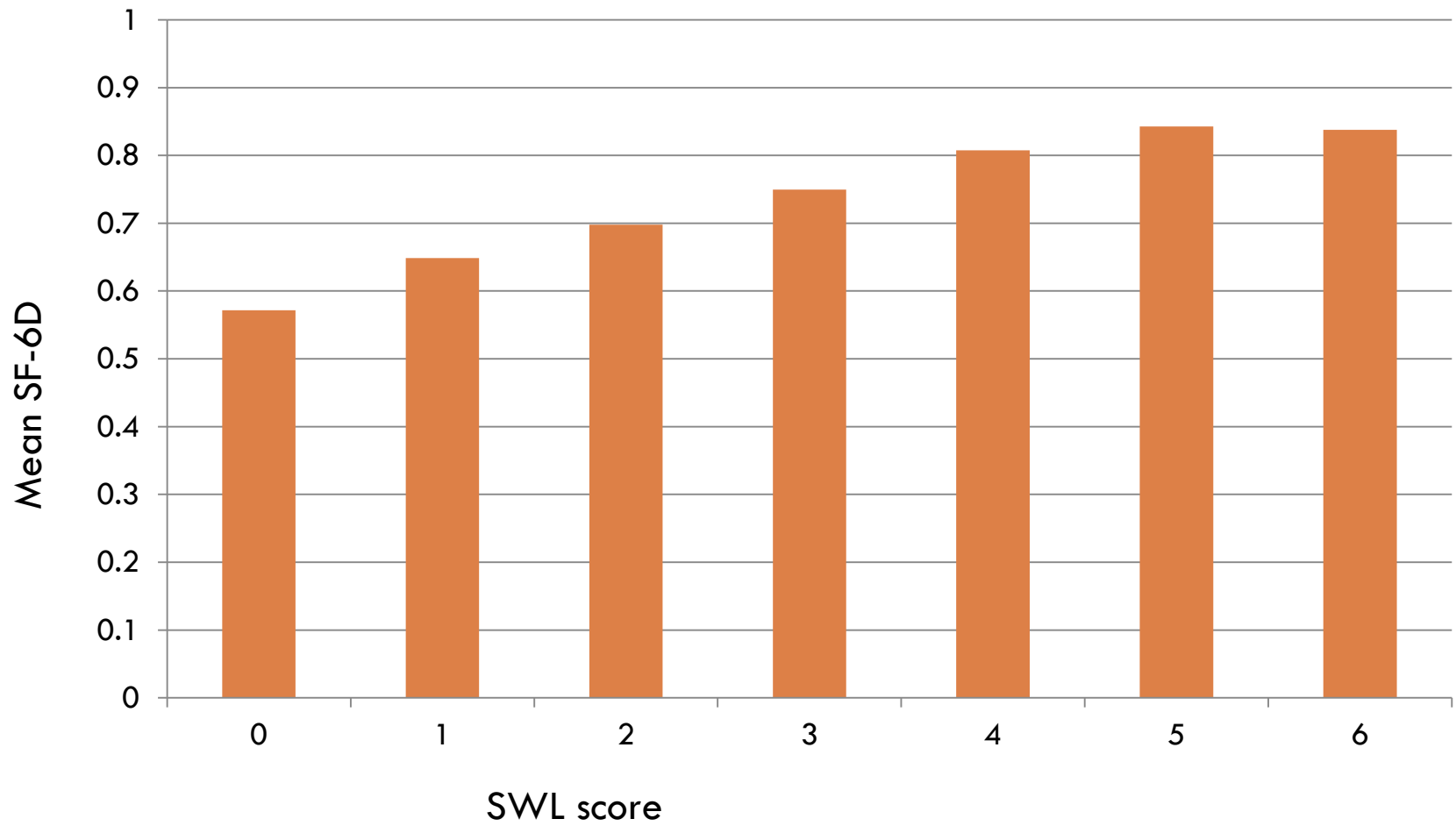
---

- Responsiveness of SWL
  - ▣ Difference-in-difference analysis
    - 2 time points
    - Waves 9 and 14
    - 16 health problems

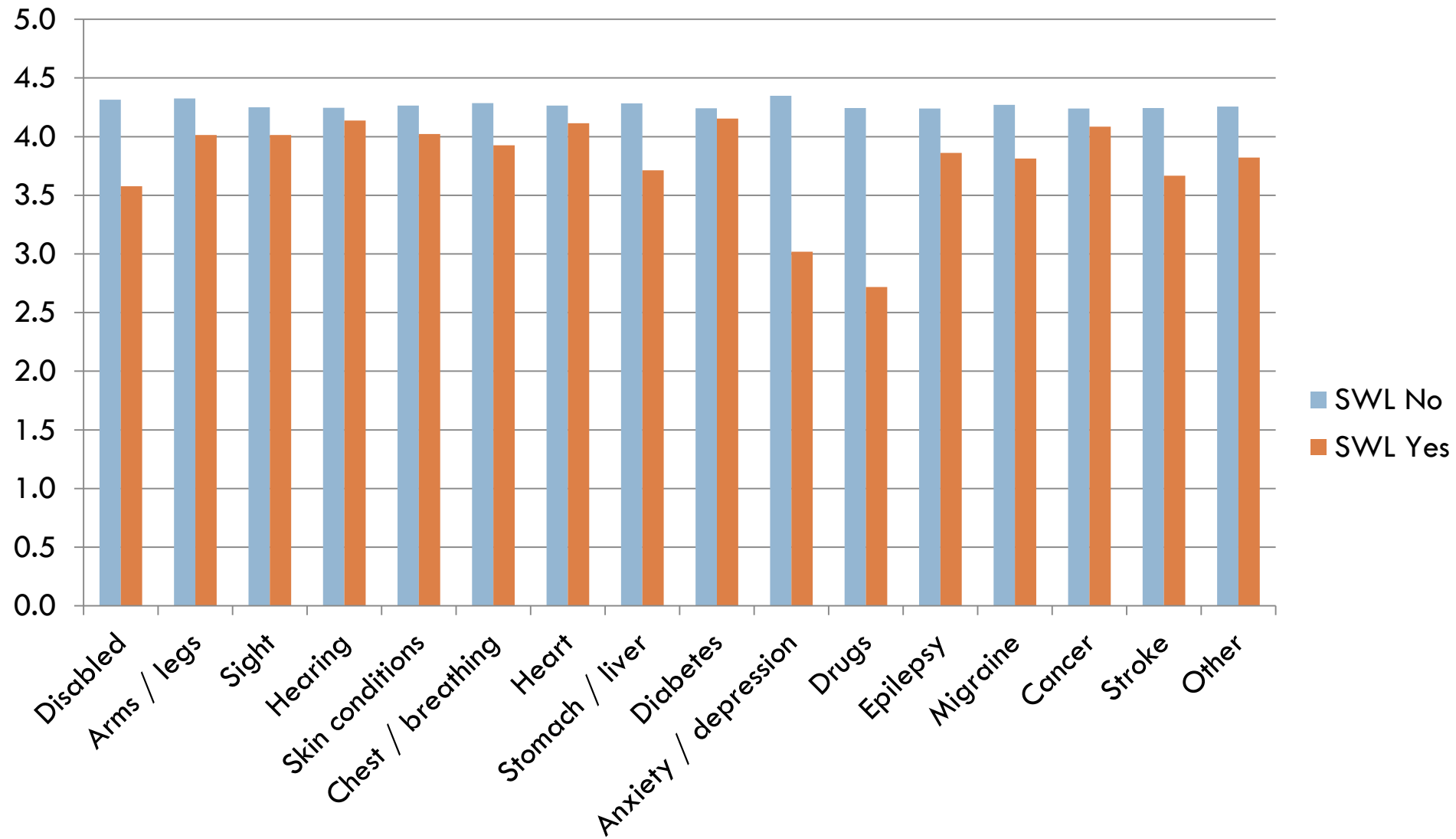
# Results



# Results

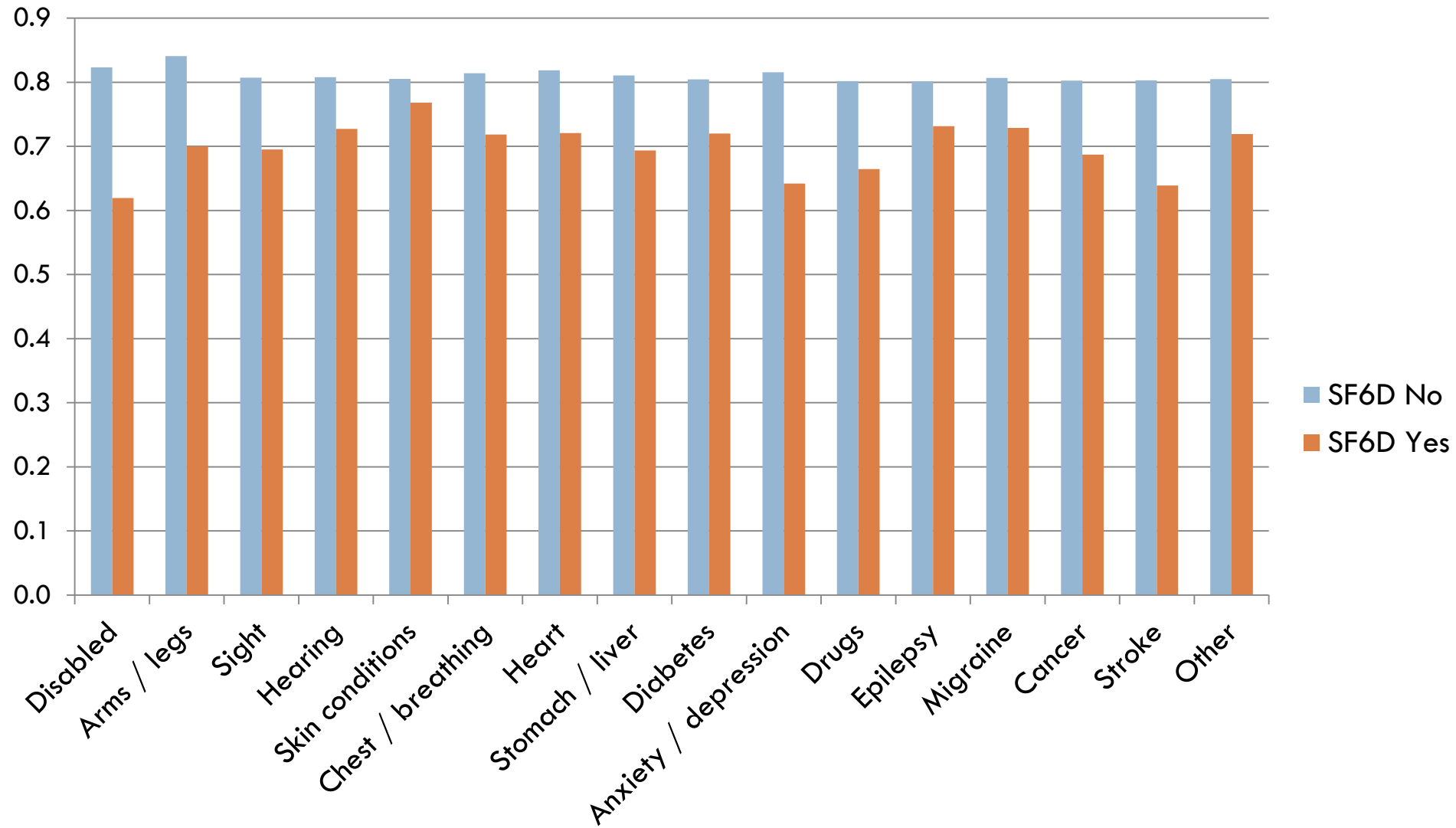


# Results





# Results



# Results

## □ Determinants of SWL and SF-6D

	<u>SWL: (Ordered Probit)</u>	<u>SF-6D (Tobit)</u>
Variable	Coefficients	Coefficients
Age	-0.0209724 ***	0.0010369 ***
Age squared	0.000303 ***	-0.0000118 ***
Female	-0.0015744	-0.0246922 ***
Black	-0.3158258 **	-0.0156654
Non-white	-0.3344164 ***	-0.0244945 ***
Married	0.2607632 ***	0.0077681 ***
No. of children	-0.0698071 ***	-0.0026101 **
Degree	-0.0720093 ***	0.0038577 *
Income	0.0000305 **	3.79E-06 ***
Log of Income	-0.0333274 *	-0.002729
Unemployed	-0.2902574 ***	-0.0094307
No. of work hours	-0.0028616 ***	0.0003075 ***
Religious activity	0.0832578 ***	0.0009713
Carer	-0.2072834 ***	-0.0101299 ***
Expected health	-0.1699588 ***	-0.0184789 ***

# Results

## □ Determinants of SWL and SF-6D

	<u>SWL: (Ordered Probit)</u>	<u>SF-6D (Tobit)</u>
Variable	Coefficients	Coefficients
Disabled	-0.33362 ***	-0.09392 ***
Arms / legs / hands	-0.12793 ***	-0.07301 ***
Sight	-0.01136	-0.01255 ***
Hearing	-0.03852	-0.00178
Skin	-0.05384 *	-0.00593 **
Chest	-0.08234 ***	-0.03463 ***
Heart	-0.09558 ***	-0.01987 ***
Stomach	-0.18799 ***	-0.03867 ***
Diabetes	0.060795	-0.00476
Anxiety	-0.75851 ***	-0.09898 ***
Drugs	-0.40845 ***	-0.03078 **
Epilepsy	-0.07141	-0.01177
Migraine	-0.10754 ***	-0.02929 ***
Cancer	-0.05011	-0.0244 ***
Stroke	-0.21596 **	-0.01375 *
Other health problems	-0.19852 ***	-0.03209 ***
_Constant		0.885954 ***

# Results

## □ Effect of having a health problem

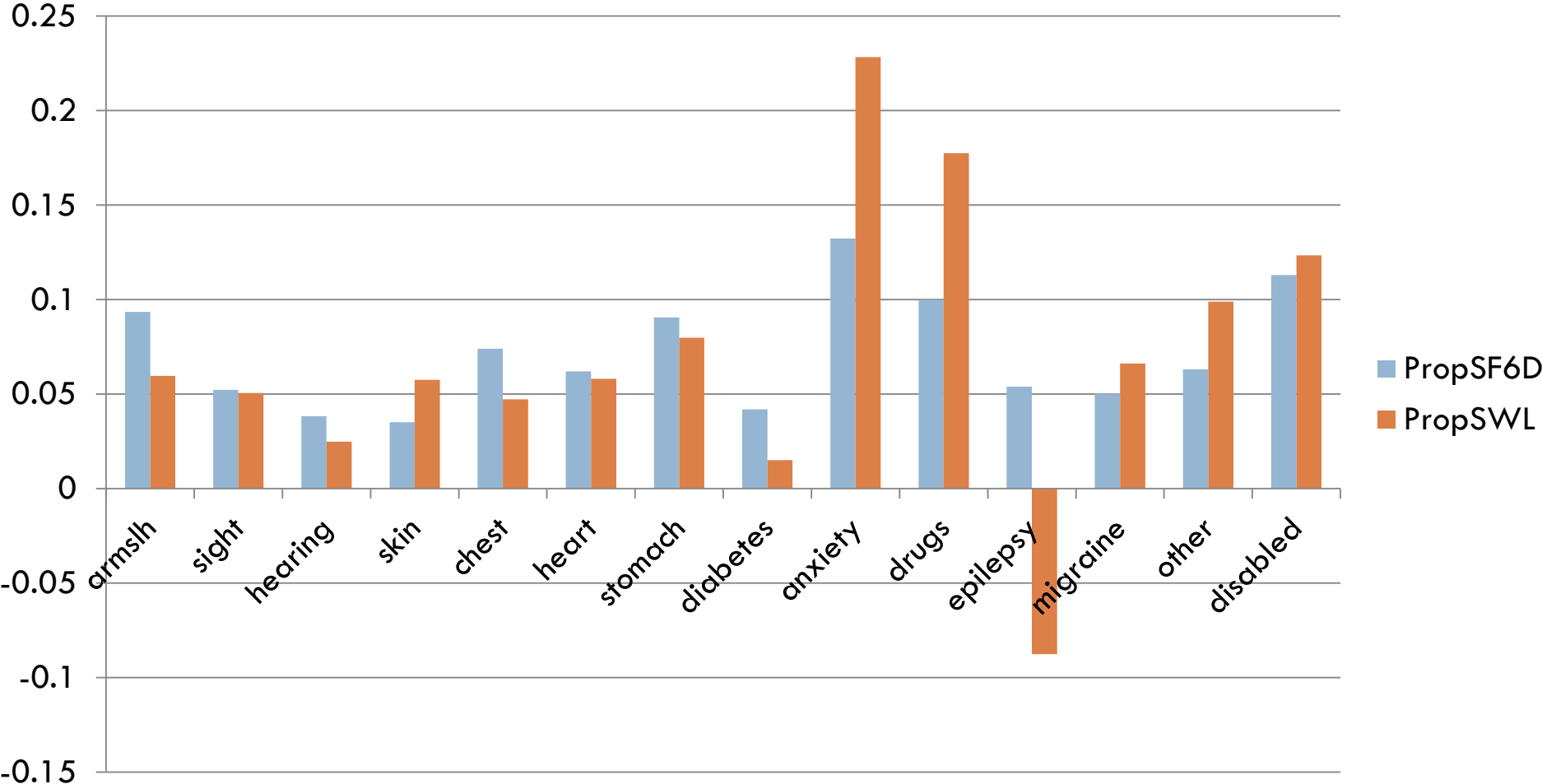
<u>Health problem</u>	<u>SWL</u>		<u>SF-6D</u>	
None (SWL=6)	19.68%	dif	0.863	dif
Disabled	11.77%	-7.91%	0.769	-0.094
Arms / legs / hands	16.33%	-3.35%	0.79	-0.073
Sight			0.851	-0.012
Skin	18.22%	-1.46%	0.857	-0.006
Chest	17.48%	-2.20%	0.828	-0.035
Heart	17.14%	-2.54%	0.843	-0.02
Stomach	14.89%	-4.79%	0.824	-0.039
Anxiety	5.35%	-14.33%	0.764	-0.099
Drugs	10.36%	-9.32%	0.832	-0.031
Migraine	16.84%	-2.84%	0.834	-0.029
Cancer			0.839	-0.024
Stroke	14.25%	-5.43%	0.849	-0.014
Other health problems	14.65%	-5.03%	0.831	-0.032

# Results

- Responsiveness to changes in health
- Difference-in-difference
  - ▣ Between those who are, and those who are not, diagnosed with a particular health problem between wave 9 and wave 14

# Results

□ Proportional difference-in-difference



# Discussion

- Limited evidence supporting literature
  - ▣ SWL and SF-6D give surprisingly similar results
- What is valued
  - Some expected differences but mainly conversion
- How it is valued
  - Time dynamic
  - Focusing effects?
- Who values it
  - Possibly most important...

# Discussion

---

- Responsiveness of SWL
  - ▣ Impressive
  - ▣ SWL responds to changes in health to similar extent to SF-6D



# Discussion

---

- Policy implications
- SWB could be used to evaluate health interventions
- Greater weight to mental health, drug/alcohol problems and skin problems
- Reduced weight to physical problems, diabetes and hearing

# Discussion

- Study limitations
  - Tons
  - D-i-D limited
    - P-score matching?
  - Only 2 waves
  - Other health problems?
  - Effect of personality?
  - Effect of focusing?

# My two cents

- SWB seems like a good alternative
  - ▣ QoL a more useful outcome
  - ▣ Removes limitations of expected utility
  - ▣ Patient preferences best
  - ▣ Less demanding methodology
    - Better response rates in patient populations



# References

- Argyle, M. (1996) Subjective Well-Being. In Avner Offer, ed. In Pursuit of the Quality of Life. 18-45 Oxford: Oxford University Press.
- Brazier J, Roberts J, Deverill M. The estimation a preference-based single index measure for health from the SF-36. *Journal of Health Economics* 2002; 21(2):271-292
- Brazier, J., Ratcliffe, J., Tsuchiya, A. & Salomon, J. (2007) *Measuring and Valuing Health Benefits for Economic Evaluation*. New York: Oxford University Press
- Brickman, P., Coates, D. & Janoff-Bulman, R. (1978) Lottery Winners and Accident Victims: Is Happiness Relative? *Journal of Personality and Social Psychology* 36(8), 917-927.
- Diener, E., & Lucas, R. (1999). Personality and subjective well-being. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology*. New York: Russell-Sage.
- Diener, E., & Suh, E. (1997). Measuring quality of life: Economic, social, and subjective indicators. *Social Indicators Research*, 40, 189-216.
- Diener, E., Eunkook, M., Suh, M., Lucas, R.E. & Smith, H.L. (1999) Subjective Well-Being: Three Decades of Progress. *Psychological Bulletin* 125(2), 276-302.
- Dolan, P. (2008) Developing Methods That Really do Value the 'Q' in the QALY. *Health Economics, Policy and Law* 3, 69-77.
- Dolan, P. (2008b) In Defence of Subjective Well-Being. *Health Economics, Policy and Law* 3, 93-95.
- Dolan, P., Lee, H., King, D. & Metcalfe, R. (2009) How Does NICE Value Health? *British Medical Journal* 339. 371-373.
- Dolan, P., Peasgood, T. & White, M. (2008) Do We Really Know What Makes Us Happy? A Review of the Economic Literature on the Factors Associated with Subjective Well-Being. *Journal of Economic Psychology* 29, 94-122

# References

- Gandjour, A. (2001) Is Subjective Well-being a Useful Parameter for Allocating Resources among Public Interventions? *Health Care Analysis* 9, 437-447.
- Hausman, D. M. (2008) Valuing Health Properly. *Health Economics, Policy and Law* 3, 79-83.
- van Hoorn, A. (2008) A Short Introduction to Subjective Well-Being: Its Measurement, Correlates and Policy Uses. OECD (ed.), *Statistics, Knowledge and Policy 2007: Measuring and Fostering the Progress of Societies*. 215-229. Paris : OECD Publishing
- Kahneman, D. & Krueger, A. B. (2006) Developments in the Measurement of Subjective Well-Being. *Journal of Economic Perspectives* 20(1), 3-24.
- Kahneman, D., Wakker, P.P. & Sarin, R. (1997) Back to Bentham? Explorations of Experienced Utility. *Quarterly Journal of Economics*, 2, 375-405.
- Oswald, A.J. & Powdthavee, N. (2005) Does Happiness Adapt? A Longitudinal Study of Disability with Implication for Economists and Judges. *IZA Discussion Papers* 2208.
- Richardson, J., Hall, J. & Salkeld, G. (1996) The Measurement of Utility in Multiphase Health States. *International Journal of Technology Assessment in Health Care* 12, 151-162
- Smith, D.M., Brown, S.L. & Ubel, P.A. (2008) Are Subjective Well-Being Measures Any Better Than Decision Utility Measures? *Health Economics, Policy and Law* 3, 85-91.
- Sutherland, H.J., Llewellyn-Thomas, H., Boyd, N.F. & Till, J.E. (1982) Attitudes toward quality of survival: The concept of "Maximal Endurable Time". *Medical Decision Making* 2, 299-309
- Ubel, P.A., Jankovic, A., Smith, D., Langa, K.M. & Fagerlin, A. (2005) What is Perfect Health to an 85-Year-Old?: Evidence for Scale Recalibration in Subjective Health Ratings, *Medical Care* 43(10), 1054-1057.

# Questions?

---

