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Polarisation or Convergence? Relative or Absolute Measures of Group Differences

Dorothy Watson, Bertrand Maitre,
Christopher T. Whelan, James
Williams



Background

- We find differences in the impact of the recession on social classes and family types depending on whether we use absolute or relative measure of gap between groups.
- Focus on absolute group differences → polarisation
 - Absolute - percentage point gaps (e.g. 50% - 20% = 30 pp)
- Focus on relative groups differences → convergence
 - Relative - includes odds ratios, relative risk (e.g. 5%/2%=2.5)
- Is one approach better than the other?



Outline

- Data and measures
 - GUI 1998 cohort
 - Economic Stress by social class
 - Consequences for children
- Strengths of different approaches
- Conclusions

Methods

- We draw on the Growing Up in Ireland (GUI) data for the cohort born in 1998
- Changes in economic stress by social class
 - Social class gap = difference between each class and the most favoured class
- Consequences for child socio-emotional development
 - If relative measure is more meaningful, would expect a bigger impact of economic stress on child SDQ for the class that had the largest *relative* increase in stress



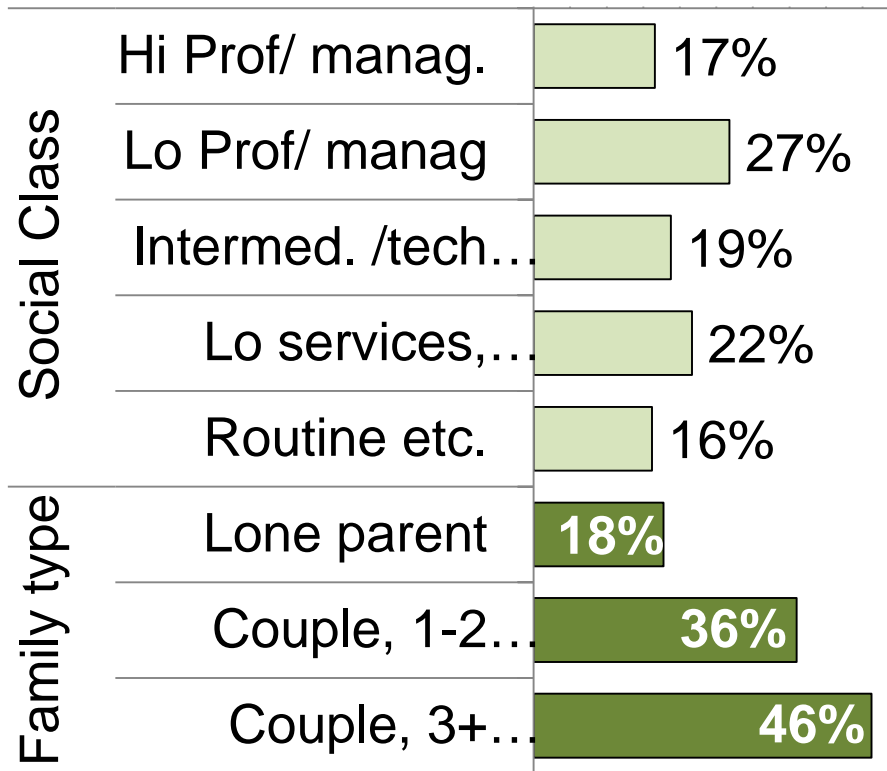
Measures

- GUI data longitudinal sample of 1998 cohort (age 9 & age 13)
 - First interview pre-recession in 2007-2008
 - Second interview mid-recession in 2011-12.
- Social class – European Socio-economic Classification (ESeC)
 - Higher professional/managerial
 - Lower professional managerial
 - Intermediate (clerical, technicians) and self-employed
 - Semi-skilled- Lower services, sales; skilled and semi-skilled manual
 - Unskilled - Routine manual and service
- Economic stress: ‘great difficulty’ or ‘difficulty’ in making ends meet.



Descriptive results – Sizes of Groups

Family type & social class (w1, size of groups)



Overall Change in economic stress

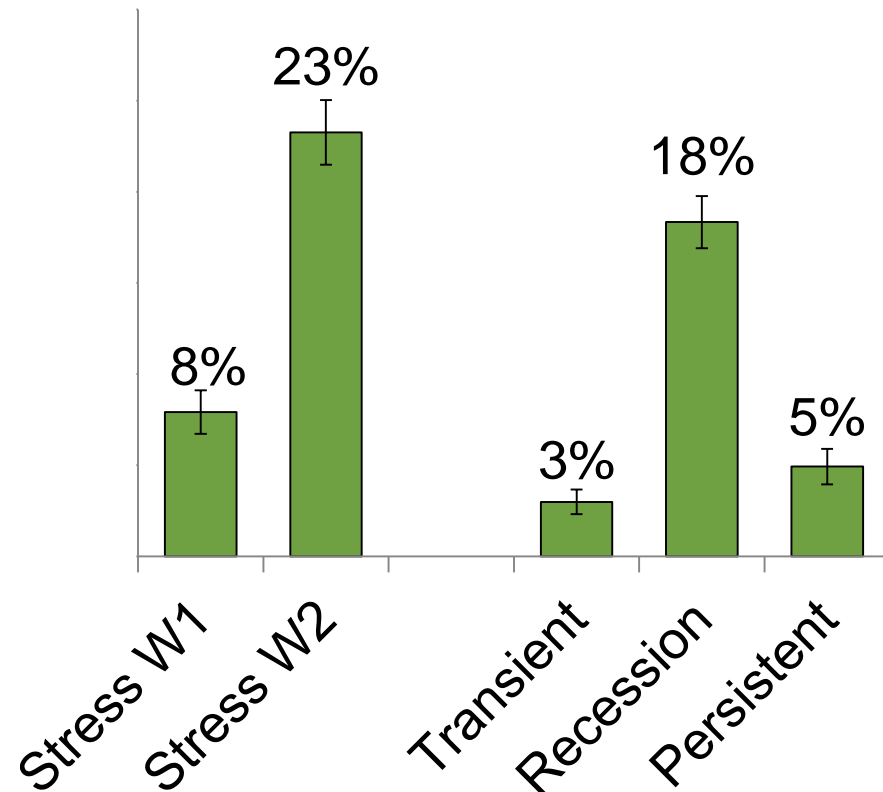




Illustration – Economic Stress by Social Class

		Hi Prof/ manag.	Lo Prof/ manag.	Inter- med.	Semi- skilled	Un- skilled
Rate		2%	4%	7%	10%	19%
Absolute Gap (B-A)		Ref	2%	5%	8%	17%
Relative Gap (B/A)		Ref	2.0	3.5	5.0	9.5

Absolute and relative difference show the same general pattern when comparing two groups:
Higher risk for unskilled social class.

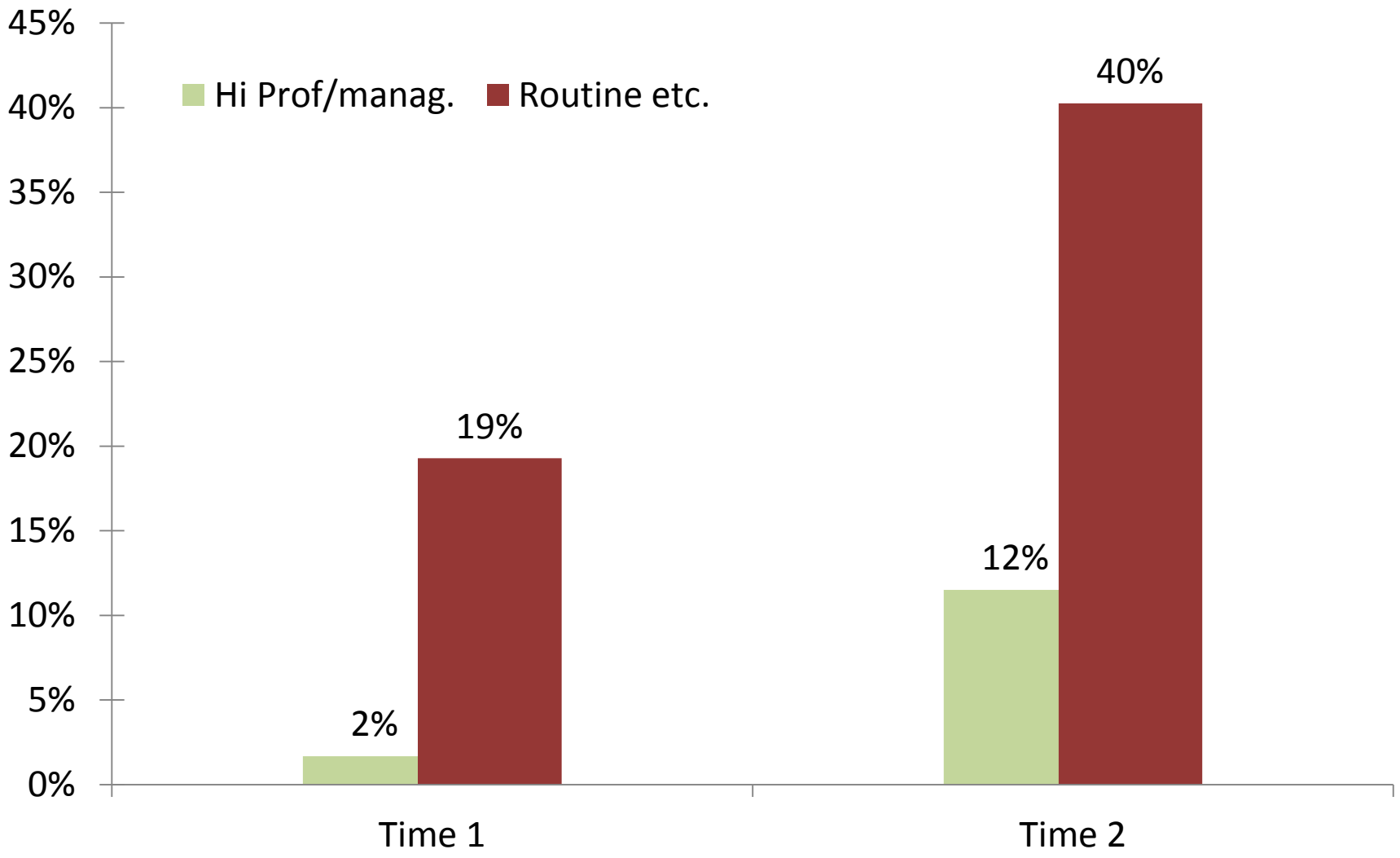
(Note – when rate for Ref. is very low, relative measure can be v. high)

Adding an interaction

- Things get more complex when we add an extra dimension, e.g. interactions with time, country
- With interactions, absolute and relative measures can result in different conclusions
 - e.g. different direction of change over time
- Questions about polarisation and convergence imply the third dimension is time



Economic stress by social class – in the two time periods



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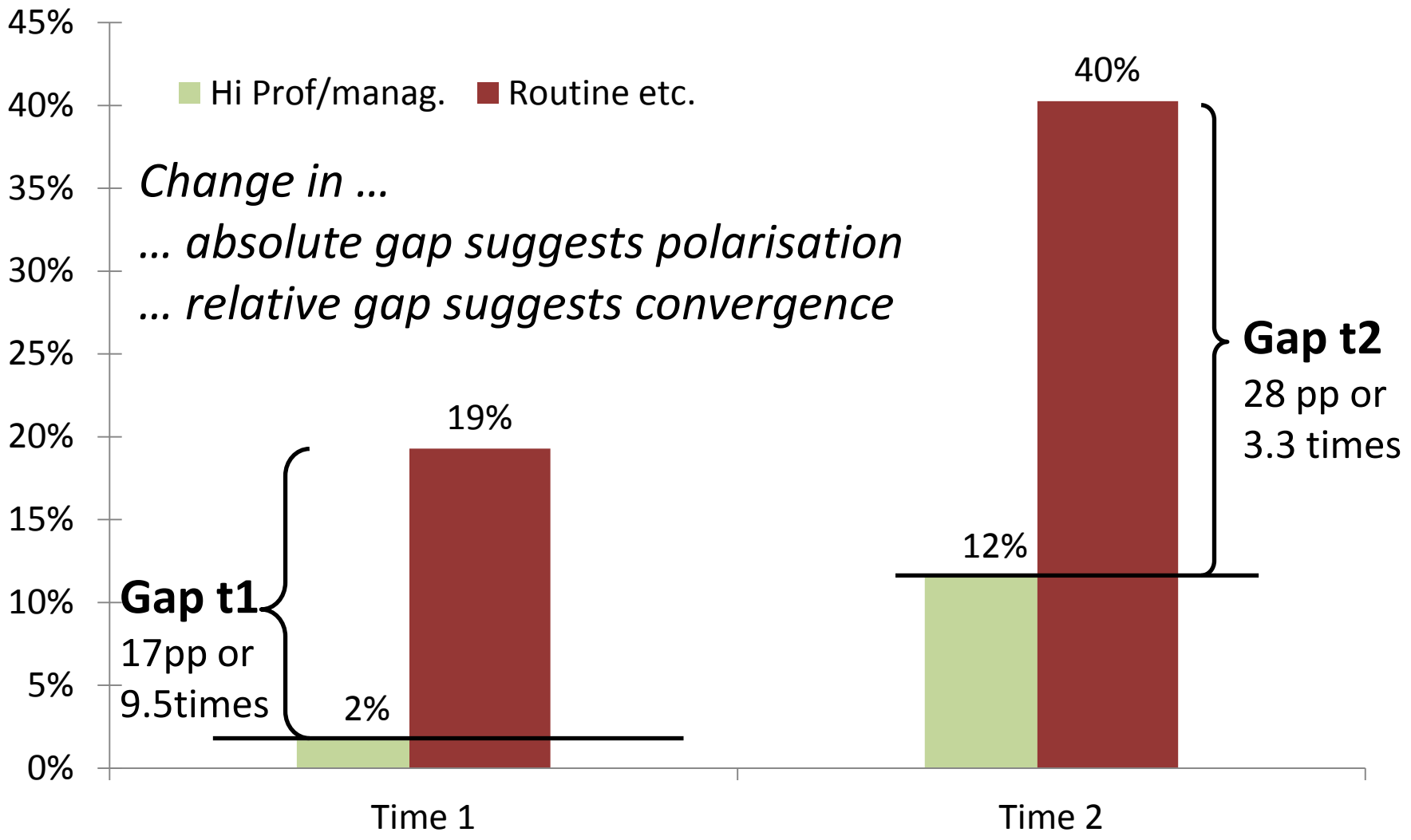




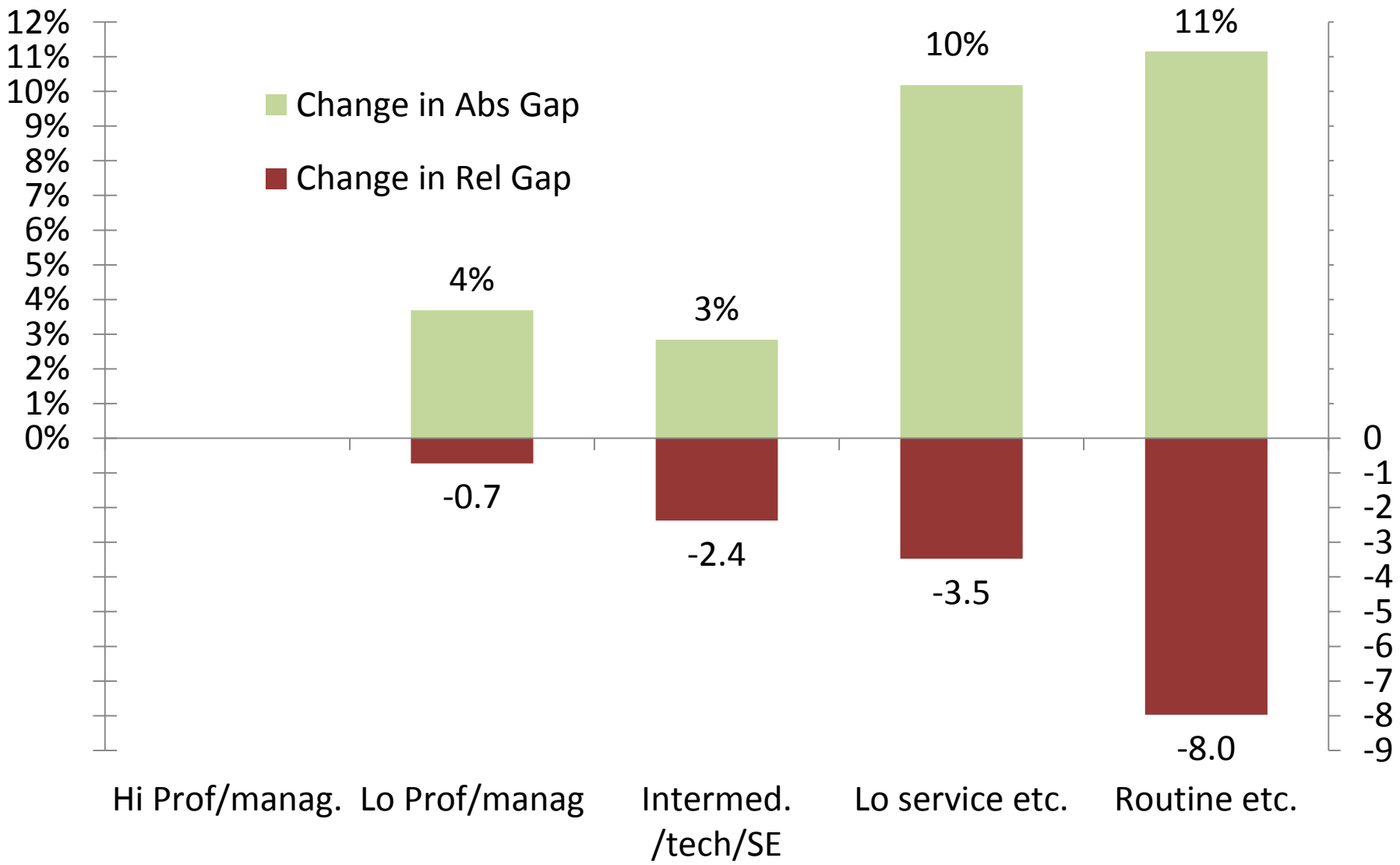
Illustration – Social Class with time

		Hi Prof/ manag.	Lo Prof/ manag.	Inter- med.	Semi- skilled	Un- skilled
Rate	Time 1	2%	4%	7%	10%	19%
	Time 2	12%	17%	20%	30%	40%
Absolute Gap (B-A)						
	Time 1	Ref	2%	5%	8%	17%
	Time 2	Ref	5%	8%	18%	28%
	Change	Ref	↑	↑	↑	↑
Relative Gap (B/A)						
	Time 1	Ref	2.0	3.5	5.0	9.5
	Time 2	Ref	1.4	1.7	2.5	3.3
	Change	Ref	↓	↓	↓	↓

Relative and Absolute measures suggest opposite patterns over time



Economic stress by social class – Charting the change in Gap





Linear Probability Models vs. Logistic Regression Models

- Linear probability models draw attention to the absolute differences between groups and (with interaction terms) absolute gaps
- Logit (and probit) models draw attention to the relative differences between groups and (with interaction terms) relative gaps



Comparing Linear and Logistic Models (y=Economic stress)

		OLS. Reg.	Logit (coef.)
Class (ref. Hi)	Lo Prof/manag	0.02**	0.82**
	Intermed. /tech/SE	0.05***	1.46***
	Lo service etc.	0.09***	1.90***
	Routine etc.	0.18***	2.64***
Time (ref. W1)	Wave 2	0.10***	2.03***
Interaction (Time x class)	Lo Prof/manag	0.04*	-0.35
	Intermed. /tech/SE	0.03	-0.83*
	Lo service etc.	0.10***	-0.69*
	Routine etc.	0.11***	-0.99**
	Constant	0.02***	-4.07***
	N cases	14,835	14,835

Interaction terms are positive for the linear OLS model (absolute gap increasing) but negative for logit model (relative gap decreasing)

Does an absolute or relative increase matter more for child outcomes?

- We cannot answer in ‘absolute’ terms
- But we examined change in child socio-emotional development (high SDQ=‘at risk’)
- Does *becoming stressed* have a bigger impact on child socio-emotional development for *higher social class*?
 - Represents a greater relative change for this class
- Found no difference
 - Interactions n.s. (for OLS, Logit, binary or continuous SDQ measure)

Conclusion

- Relative and absolute indicators of group differences can give different results when interacted with a third dimension (e.g. Time)
 - E.g., relative indicator suggested convergence while absolute indicator suggested polarisation
 - Linear and logit interactions most likely to differ in sign with (a) low rate for Ref. &(b) high absolute gap
 - Beware of interpreting interactions from logistic regressions as if they reflected absolute differences

Implications

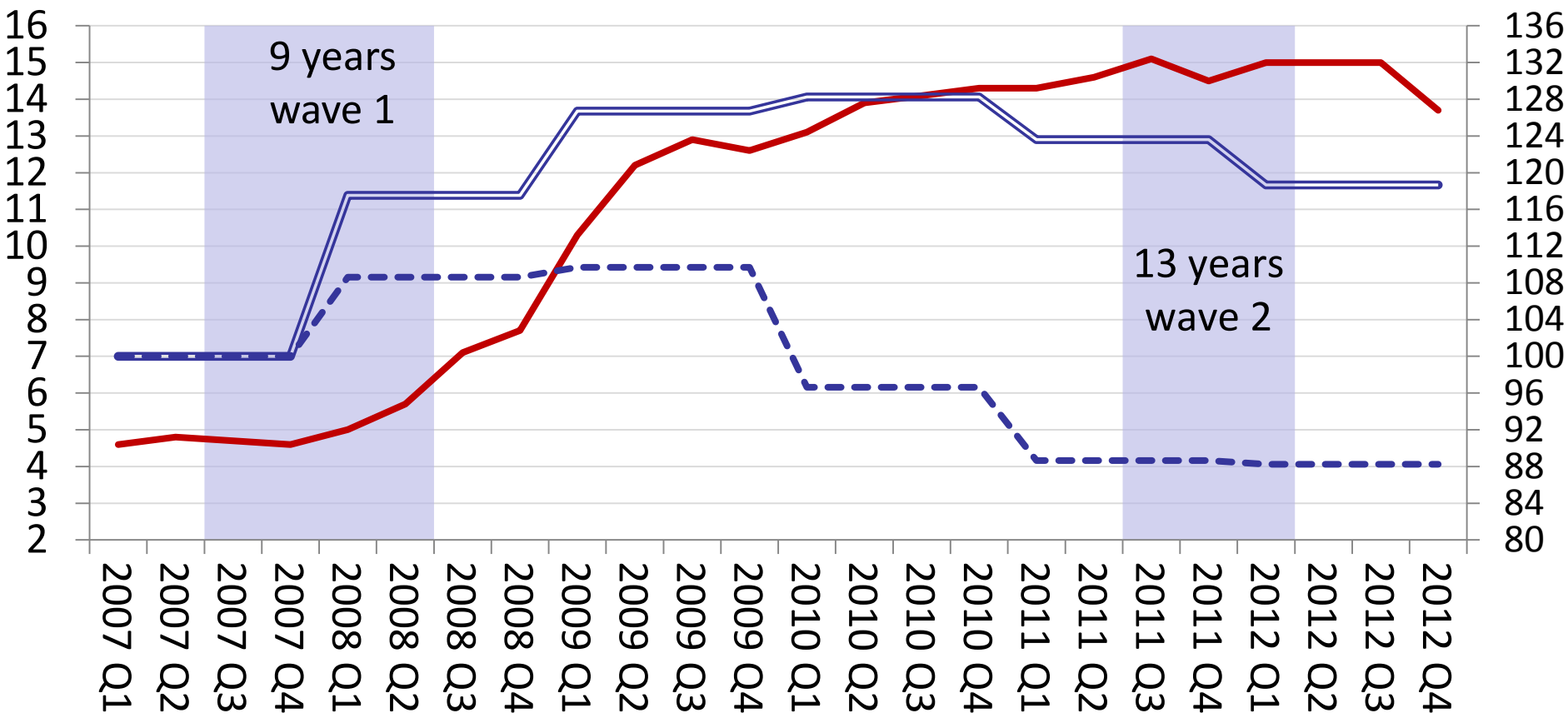
- Both relative and absolute indicators have value
 - Relative group differences point to intergroup inequality which is usually of policy concern in itself
 - Absolute group differences give an important balancing perspective on magnitude of gap
 - What proportion of group is affected
- Whether relative differences ‘matter more’ must be tested empirically for different outcomes



EXTRA SLIDES



Timing of Fieldwork (98 cohort)



— Unemployment (%), Left hand axis)

- - - Child benefit, per child (2007=100)

— One Parent Family with 1 child (2007=100)