The Importance of Specificity in Occupation-based Social Classifications

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Paul Lambert, Larry Tan,
Ken Prandy, Vernon Gayle,
and Ken Turner

Universality and Specificity

"Occupations are ranked in the same order in most nations and over time. ..Hout referred to the pattern of invariance as the "Treiman constant". ..the Treiman constant may be the only universal sociologists have discovered." (Hout and DiPrete, 2006:2-3)

"the idea of indexing a person's origin and destination by occupation is weakened if the *meaning* of being, say, a manual worker is not the same at origin and destination. Historical comparisons become unreliable" (Payne, 1992: 220, cited in Bottero, 2005:65)

The value of specificity in contemporary survey research

1) Theoretical
2) Empirical
3) Technological

How could specificity matter?

- Historical change in occupational circumstances
  - Studying contemporary mobility (e.g. Payne 1992)
  - Labour historians neglect changed meanings (e.g. Sewell 1993)
  - Abbott 2006: characterising the PDOS
- Gender differences
  - Male / female occupational structures
  - Substantial differences in class locations
- National differences
  - National labour markets
  - National classification schemes
  - Comparative inequalities
- Level of occupational detail
  - How to incorporate local details in universal schemes?

The Scientific Study of Society
[Steuer 2003]

Universality in Occupation-based analyses...

- Cumulative development of knowledge and reference to previous research
  - √ Offer potential comparability
  - × Engage with other approaches
- Empirical evaluations
  - ? Study wide structures (stratification v's class perspectives)
  - × Study minutiae / occupational detail
  - × The need to keep checking..
  - √ ****Practical research evaluations****

Attainable universality?

- **Setting standards for other researchers and comparable findings (H&D 2006)**
  - of 5 other papers in H&D *RSSM* issue, all discuss occupational classifications, and none exploit Treiman constant
  - in 2005 alone, at least 7 new contemporary occupation based social classifications were proposed within UK sociology (and counting..)
    - [Chan and Goldthorpe; Oesch; Weeden & Grusky; Rose et al; Lambert et al; Abbott; Glucksman]
  - Periodic updates to government occupational unit group measures
  - Specificity in universal schemes [EGP / E-SEC]
- **Conceptualising stratification as vertical**
  - Categorical preferences in discourse and analyses

Attainable specificity?

CAMSIS: *Measure of occupational stratification reflecting the typical social distances between occupations, arranged in a single hierarchy representing the dominant empirical dimension of social interaction*

Separate derivations for gender groups, countries, and time periods

- impossibly relativist?
- measurement errors?
- *..only specific if/when scales have been calculated..*
- *..and if anyone would ever use them..*

Contemporary trends in survey analysis

- **Cross-national research trends:**
  - Additions from **new countries / economies**
  - Widening **time spells** span periods of economic change
  - **Harmonisation of questionnaires and design**
  - **Disclosure** control fears ⇒ less detail in variables
  - Speed of delivery ⇒ wider & non-specialist **user communities**

- **Pressures in Communicating results**
  - Universal schemes more easily described
    - Absolute v's relative comparability
  - Categorical schemes more easily understood
    - Conflation with popular 'class' measures

2) Empirical assessments

- Previous papers
  - Cross-national comparisons [Prandy et al 2002; Lambert et al 2005]
  - Schemes fixed in time and place (ISEI / SIOPS; 'Skill4'; EGP)
  - Specific schemes (CAMSIS)
- CNEF comparison

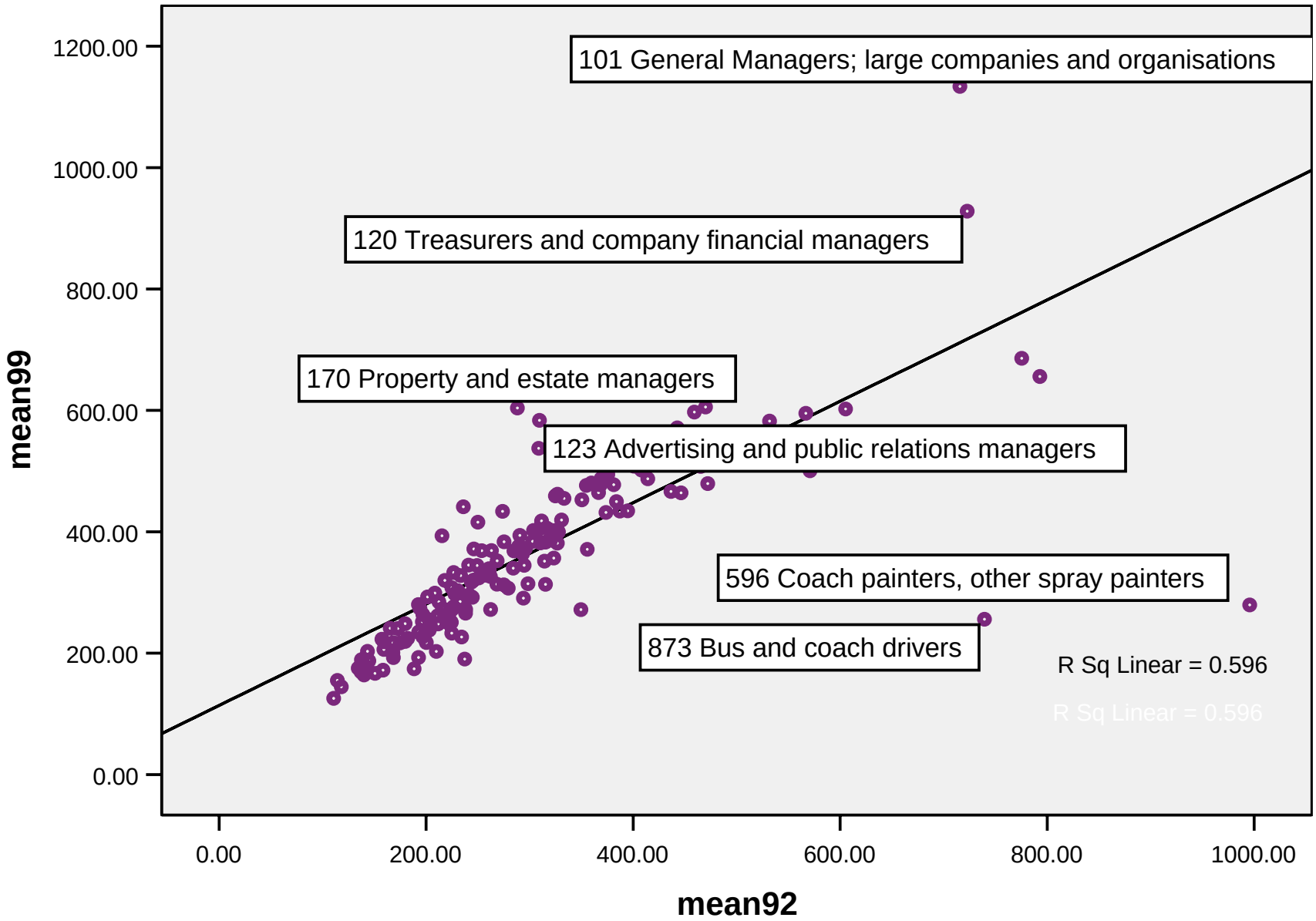
➢ i) Are the properties of occupation-based social classifications different for different countries, genders, time periods?
  - *Yes!*
  - *But broad similarity is also a fair model…*

➢ ii) How important / robust are 'specific' differences between the 'same' occupations in different contexts?
  - *Mixed evidence…*

i) The extent of the constant

CNEF – Cross-national differences in occupational patterns: Germany / US compared to UK					
IS-68 groups	**% Fem**	**%FT**	**Inc**	**Educ**	**Hlth**
Architects / Engineers	G, US	G	G, US	G, US	
Educators	G, US	G, US	US	G, US	US
Business leaders	G, US		G, US	US	
Cook / waiter	G, US	US		G	G
Machine fitter	US			G	
Transport operative			US	G	G, US
Labourer / Craftsman	G, US		G	G	G, US

Average income by UK SOC-90 categories, 1992 and 1999



Source: Full time workers, Quarterly Labour Force Surveys, Dec92-Feb93; Apr-Jun99

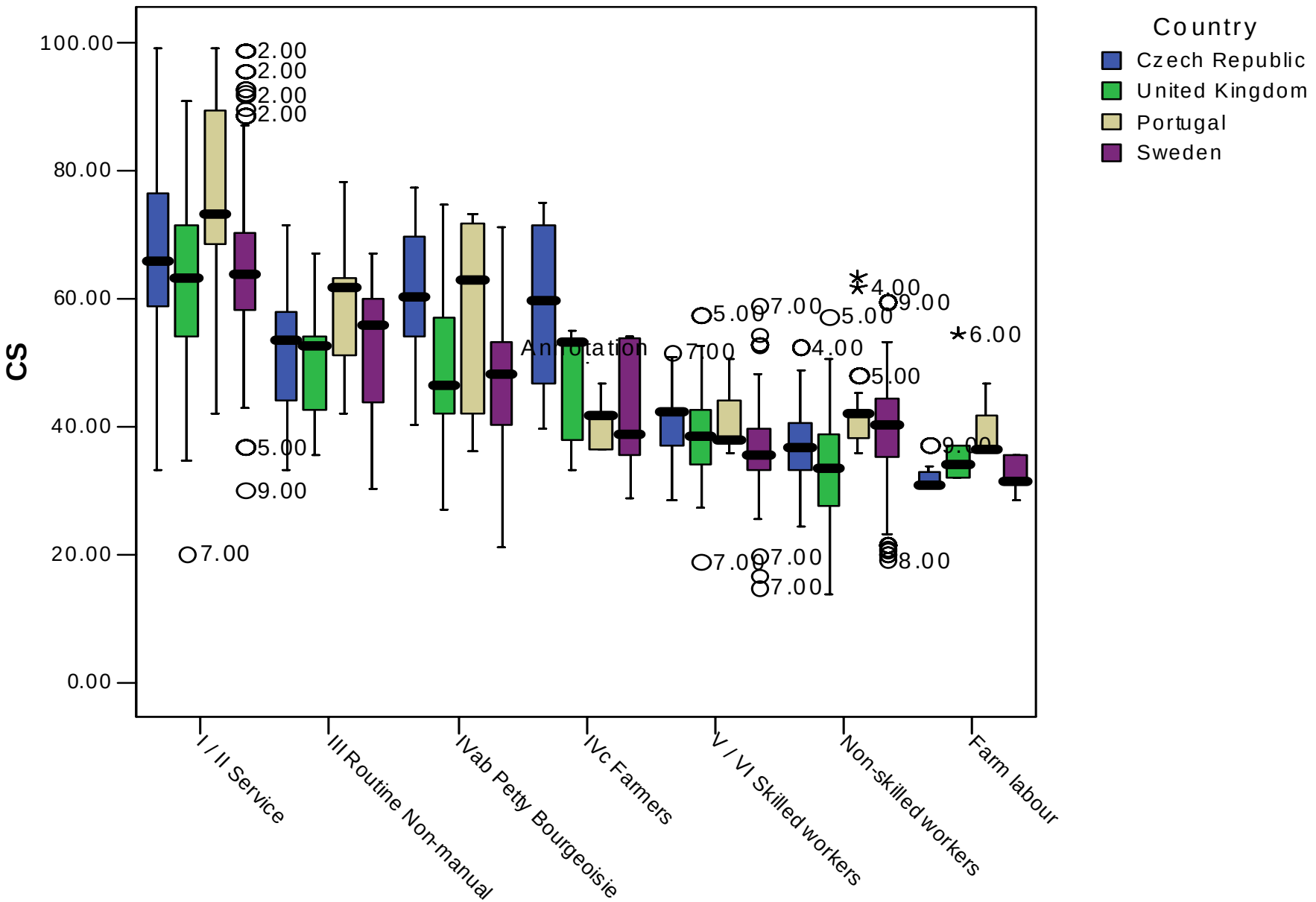
CAMSIS v's ISEI by country

ISCO major groups and countries with largest departures, ESS 2002:

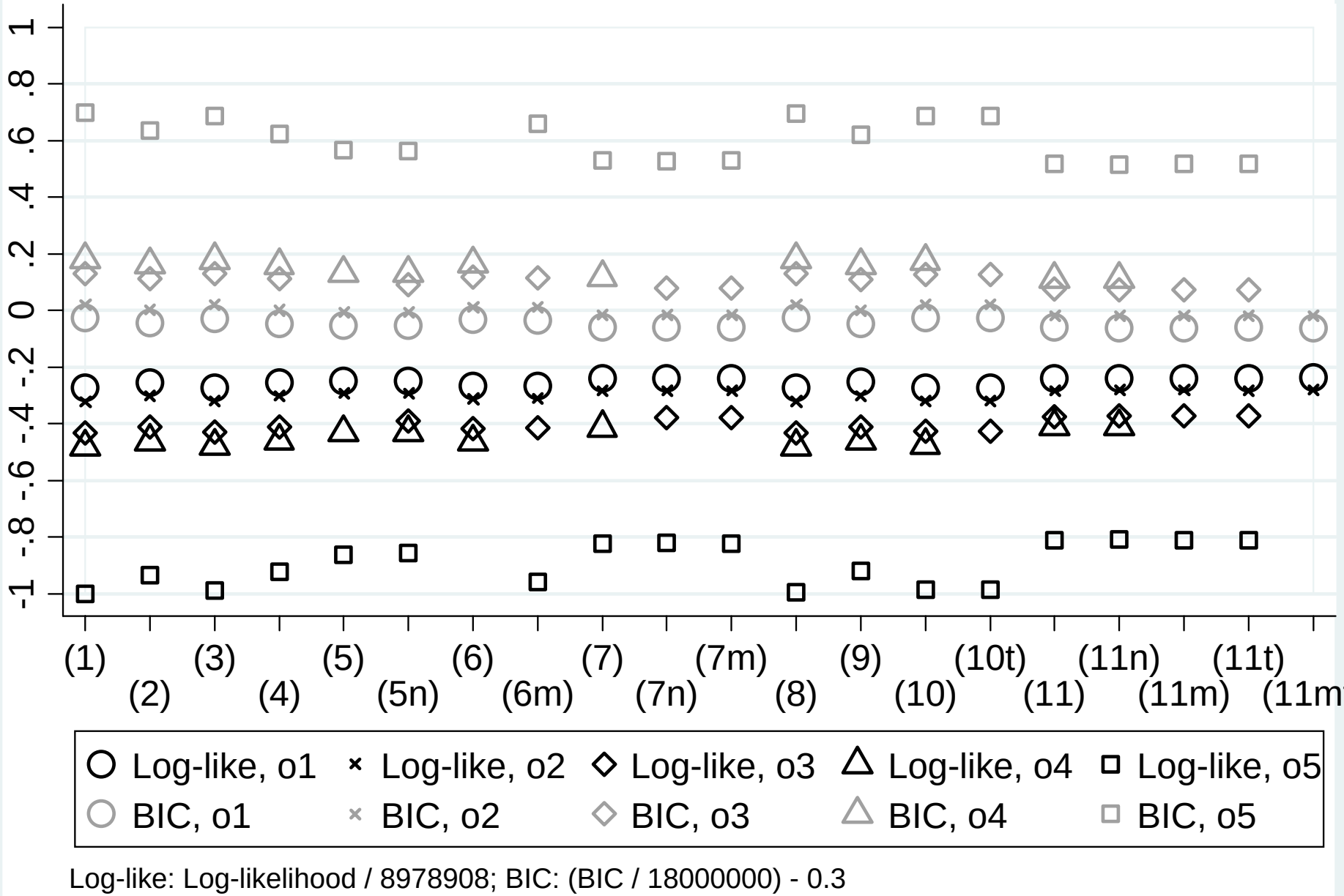
- **Farming** generally (CS higher both M & F)
- **Female clerks** (ISEI higher)
- **Crafts** (CS lower for women in most countries)

- Marked variability within ISCO major groups
  - Czech-F; Irel-M; Poland-M/F; Port-F; Swed-F; Slovenia M/F;
- Least variability
  - Hungary M/F; UK M;

CAMSIS v's EGP by country



Fit statistics, universal / specific HISCAM scales (models as Table 2)



Log-like: Log-likelihood / 8978908; BIC: (BIC / 18000000) - 0.3

	HISCAM v0.1	*SIOPS*	*HISCLASS*
Universal		75	76
	o5 / o1	***o5***	***o5***
Netherlands	97 / 58	51	77
Germany	87 / 23	27	32
France	96 / 78	66	70
Sweden	88 / 41	11	62
Britain	90 / 32	1	49
Canada	89 / 89	67	80
Early	99 / 97	74	75
Late	95 / 98	74	77
Male	92 / 92	62	71
Female	95 / 60	25	45

The extent of the constant – conclusion (i)

- There is ample evidence of *some* non-constancy
- Most important when studying:
  - Gender inequalities
  - Sub-populations
  - Particular occupational units
    - Miscellaneous; agriculture; education-related; gender segregated
  - Evolving / Transition economies
- Least important when studying large contexts / generalisations

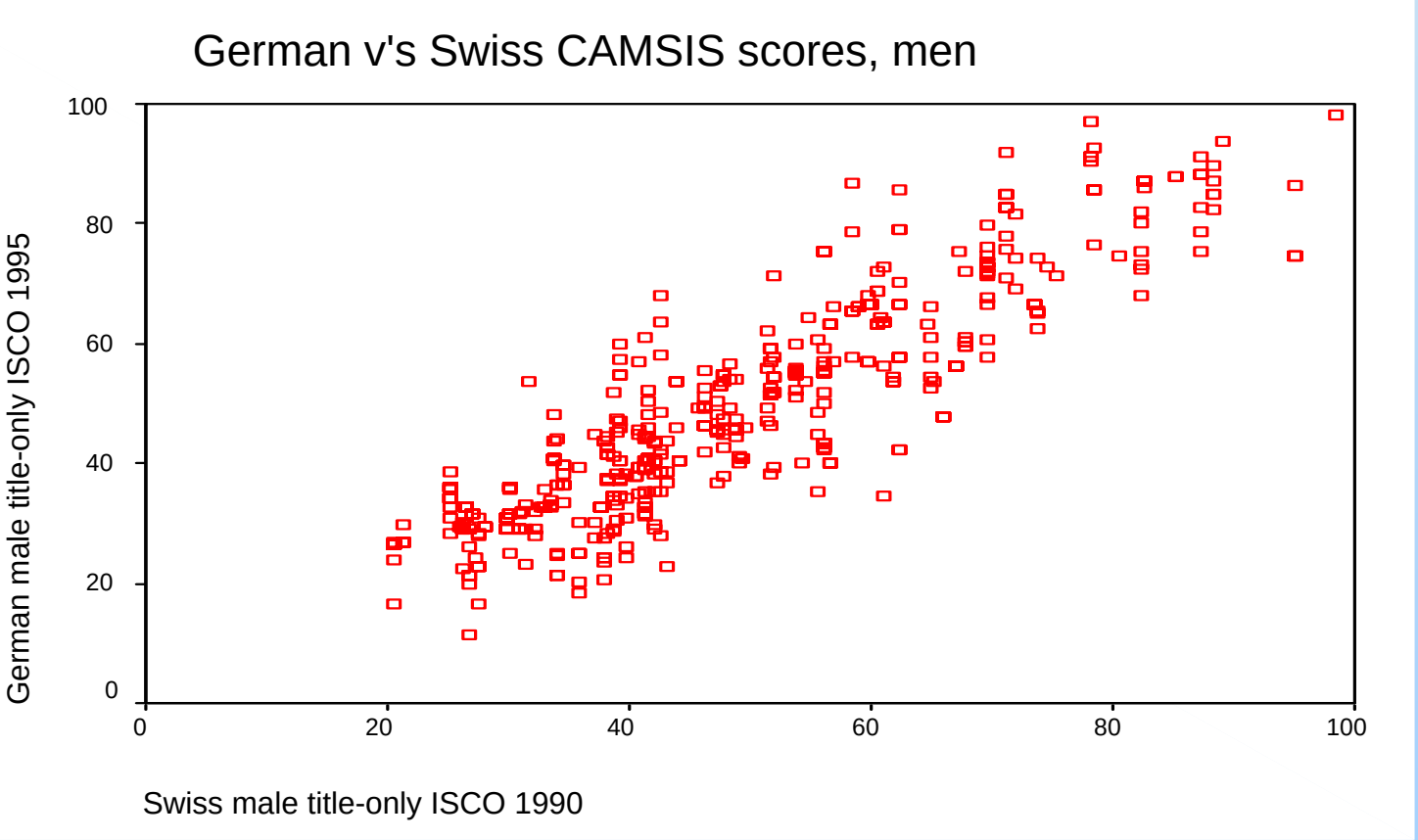
➢ *This is all ok for the Treiman constant, if traded against difficulties of specific schemes*

ii) The importance of specificity

CNEF 1991-2001						
	Britain		**Germany**		**USA**	
	U	S	U	S	U	S
Female	*2.1*	*1.8*	*4.7*	*4.4*	*5.8*	*7.2*
Lo-Ed	*-12.5*	*-14.5*	*-8.9*	*-10.9*	*-11.4*	*-12.9*
Hi-Ed	*14.3*	*17.8*	*28.4*	*32.5*	*23.4*	*29.4*
Year	*-6.9*	*-6.0*	*3.5*	*6.0*	*16.2*	*17.8*

z-statistic for sign and standardised effect of explanatory variables.

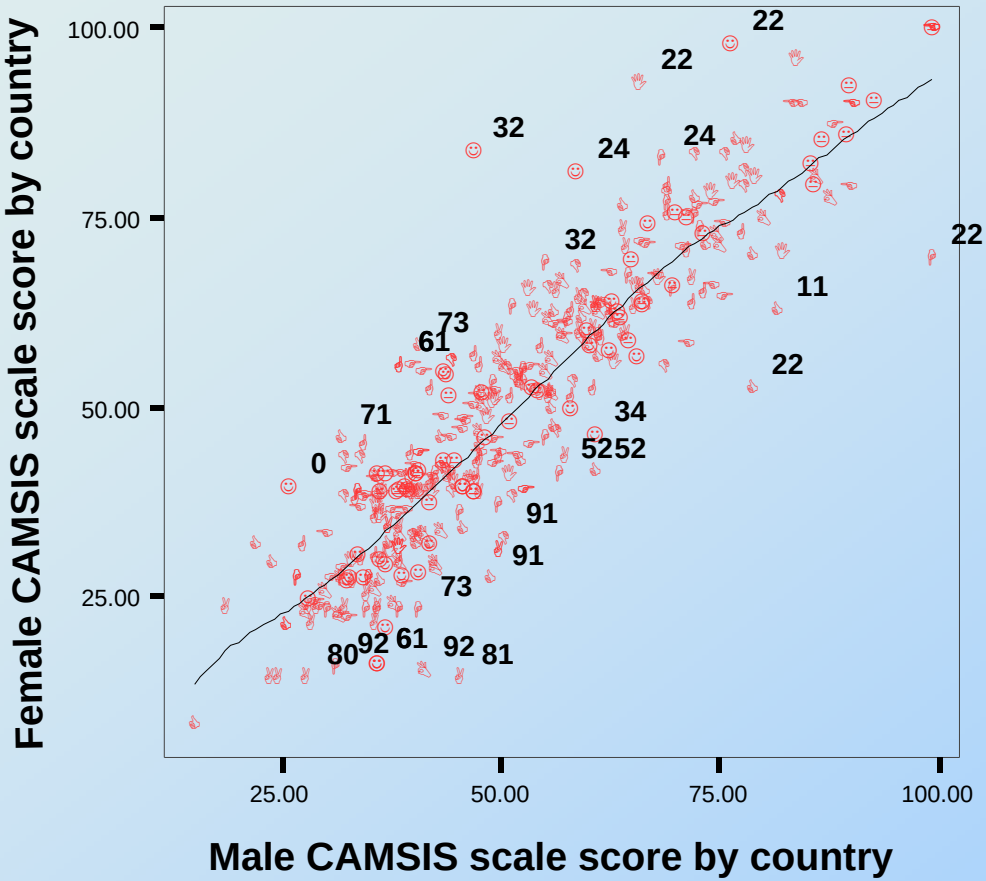
Models predict occupational stratification advantage for FT workers only. Other controls for age, number of children, subjective health, Heckman selection for working FT, and panel clustering.

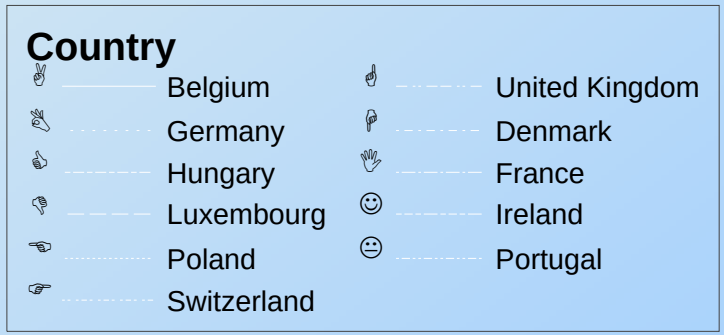


- Patterns: **Some plausible differences v's some probable 'noise'**. Eg structural differences:
  - ISCO major group Professions higher on average in Germany and Switz for CS than other schemes
  - ISCO major group Crafts higher on average in Turkey and Germany for CS than for other schemes

Male v's female CAMSIS-CHER scores

ISCO-88 sub-major group scores





Numbers show selected outlying ISCO-88 sub-major group categories.
'Smoother line' illustrates aggregate level cross-country male-female links.

Figure 4: Universal to Historical-specific scale scores, HISCO unit groups

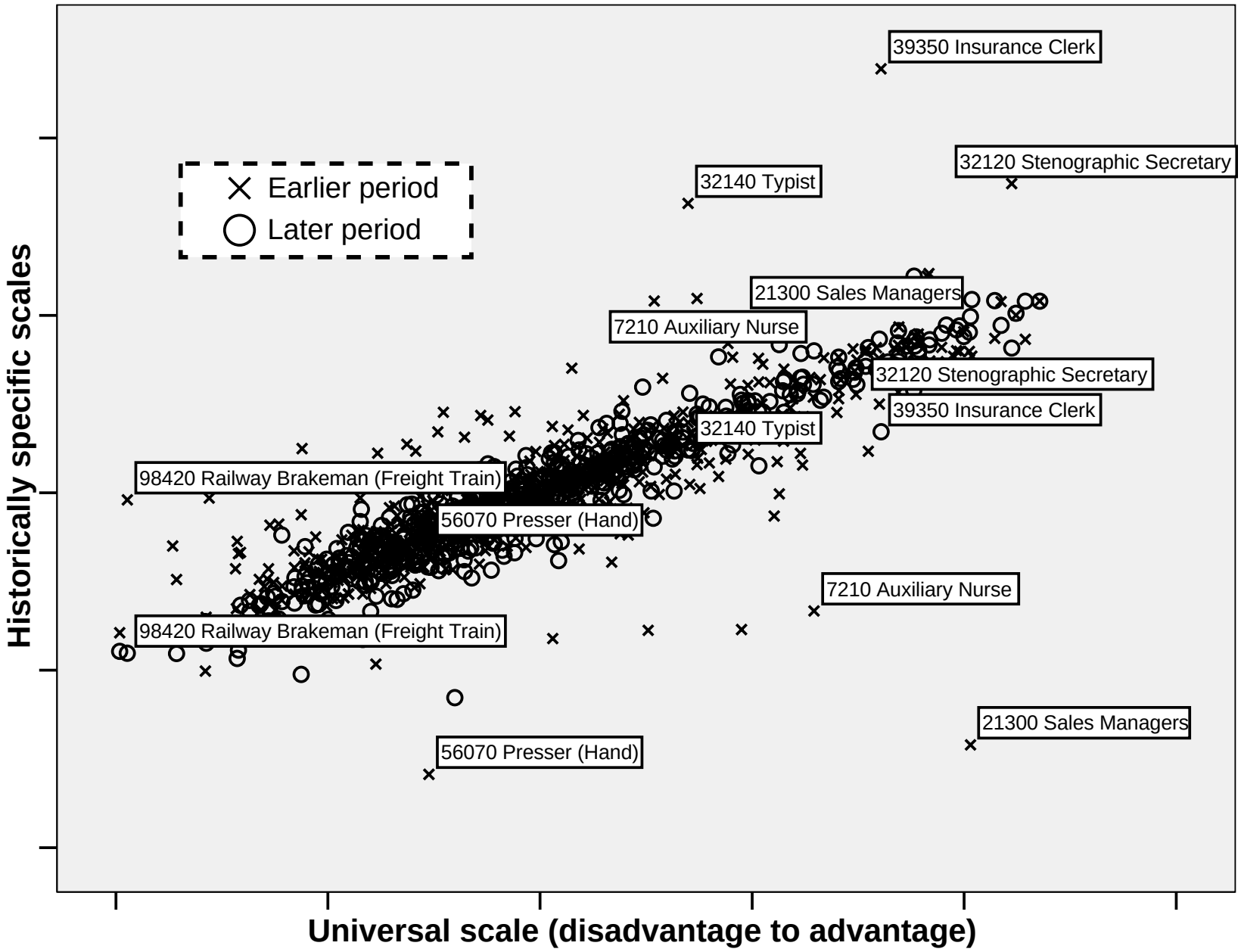
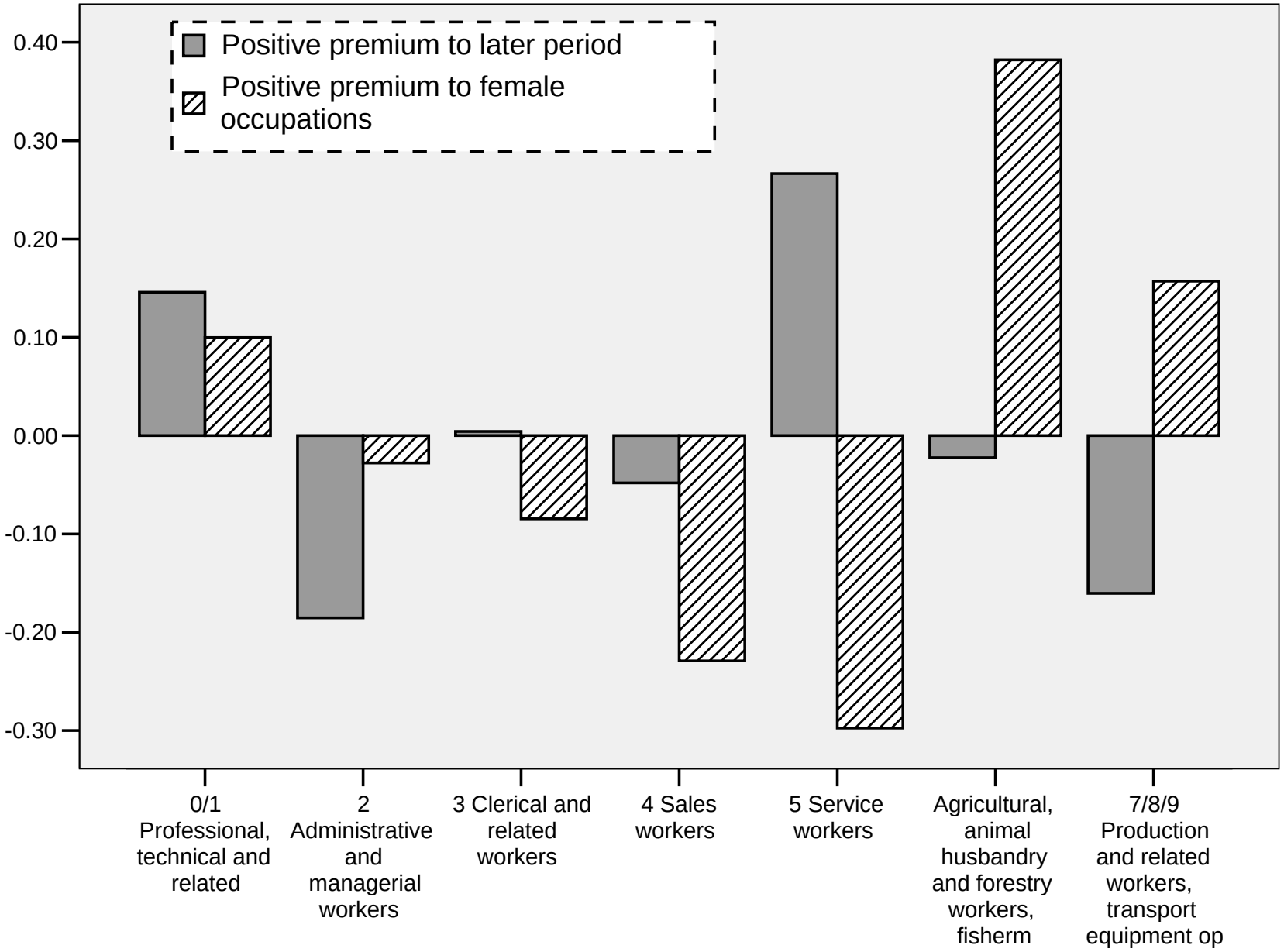


Figure 5: Time period and Gender differences by HISCO major group



Conclusion (ii): The empirical importance of specificity

- Substantively explicable differences in occupational positions
  - Gender
  - History
  - National comparisons
- Influences our understanding of selected processes
  - E.g. educational attainment
- *Won't influence* many generalist interpretations

3) Technologies of occupation-based social classification

- CNEF revisited
  - **Model 1 (universal ISEI)**
    - CNEF data plus 1 file download
    - Approx 1.5k lines in Stata..
    - Approx 6 hours development
  - **Model 2 (specific - CAMSIS)**
    - CNEF data, plus original BHPS, PSID and GSOEP, plus 6 further file downloads
    - Approx 3k lines in Stata..
    - Approx 40 hours development / estimation

Practicalities: Operationalisations

	ESS	ISSP	LIS	CHER
EGP	✓	? (Some weak empst)	× (lacks empst)	× (lacks empst & isco)
Skill4	✓	✓	? (not all ISCO)	✓
ISEI	✓ (except origins)	✓	? (not all ISCO)	? (Some weak ISCO)
CAMSIS	✓ (except origins)	✓	✓	? (Some weak ISCO)

GEODE - Grid Enabled Occupational Data Environment

*Use of **'Grid'** technologies to develop an internet based **portal** to facilitate data **matching between source occupational data and occupational information resources** such as social classification categories, stratification scale scores, segregation indexes, etc.*

- *..promises to end scheme operationalisation difficulties…!*
- E-Social Science, Stirling University, Oct 05 – May 07
- Contact: paul.lambert@stirling.ac.uk

What's the problem?

Occupation-based social classifications are usually indexed by ***Occupational Unit Group (OUG).*** *But…*

- **Numerous alternative occupational data files**
  - (time; country; format)
- **Alternative OUG schemes** + other index factors
- Inconsistent translations to social classifications
  - 'by file or by fiat'
- **Dynamic updates** to occupational data resources
- ***Low uptake of existing occupational information resources***
- **Strict security** constraints on users' micro-social survey data

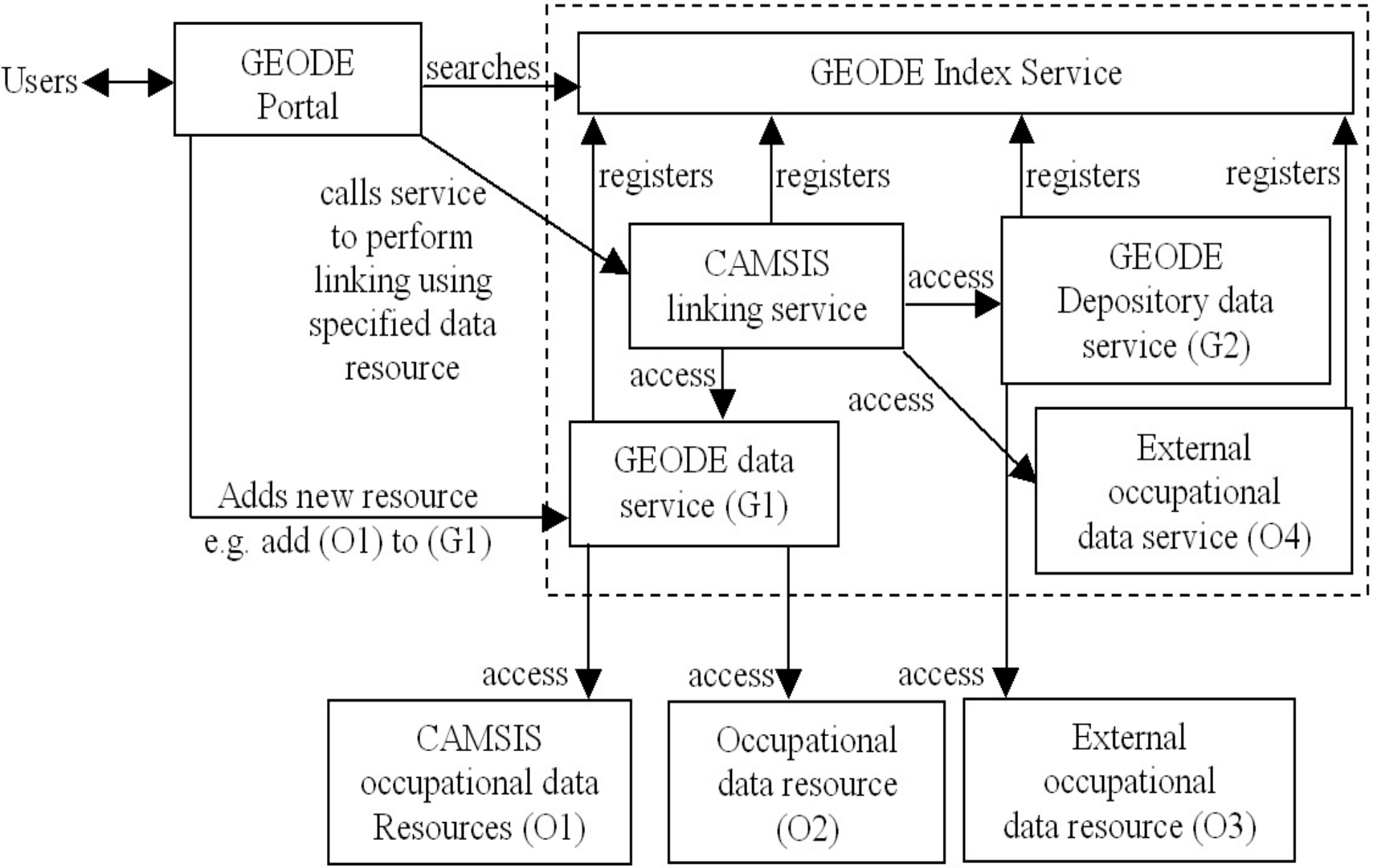
Some illustrative occupational information resources

	Index units	# distinct files (*average size kb*)	Updates?
CAMSIS, www.camsis.stir.ac.uk	Local OUG*(e.s.)	200 *(100)*	y
CAMSIS value labels www.camsis.stir.ac.uk	Local OUG	50 *(50)*	n
ISEI tools, home.fsw.vu.nl/~ganzeboom	Int. OUG	20 *(50)*	y
E-Sec matrices www.iser.essex.ac.uk/esec	Int. OUG*(e.s.)	20 *(200)*	n
Hakim gender seg codes (Hakim 1998)	Local OUG	2 *(paper)*	n

GEODE: Occupational Information Depository & Access

- **Data Index Service**
  - DDI metadata
  - OGSA-DAI (Grid programming)
- **Portal access**
  - GSI (Grid architecture)
  - Secure access
  - User-friendly search / connection facilities

GEODE - architecture



Conclusions: Specificity / Universality

- Treiman constant (weak form)

But…

  - Loss of the technological excuse…?
  - Sustainability of specific approaches
  - Need to engage with specific expectations
  - Contextuality of importance of specificity…