

Education and Welfare in Ghana: The Evolution of Exclusion 1991-2006

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Centre**

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Data: The Ghana Living Standards Surveys

- **Nationally representative cross-sectional household surveys begun in 1987.**
- **Most recent round completed in 2006.**
- **Data from rounds 3 to 5 (completed in 1992, 1999 and 2006) employed because of highly comparable design and question modules.**

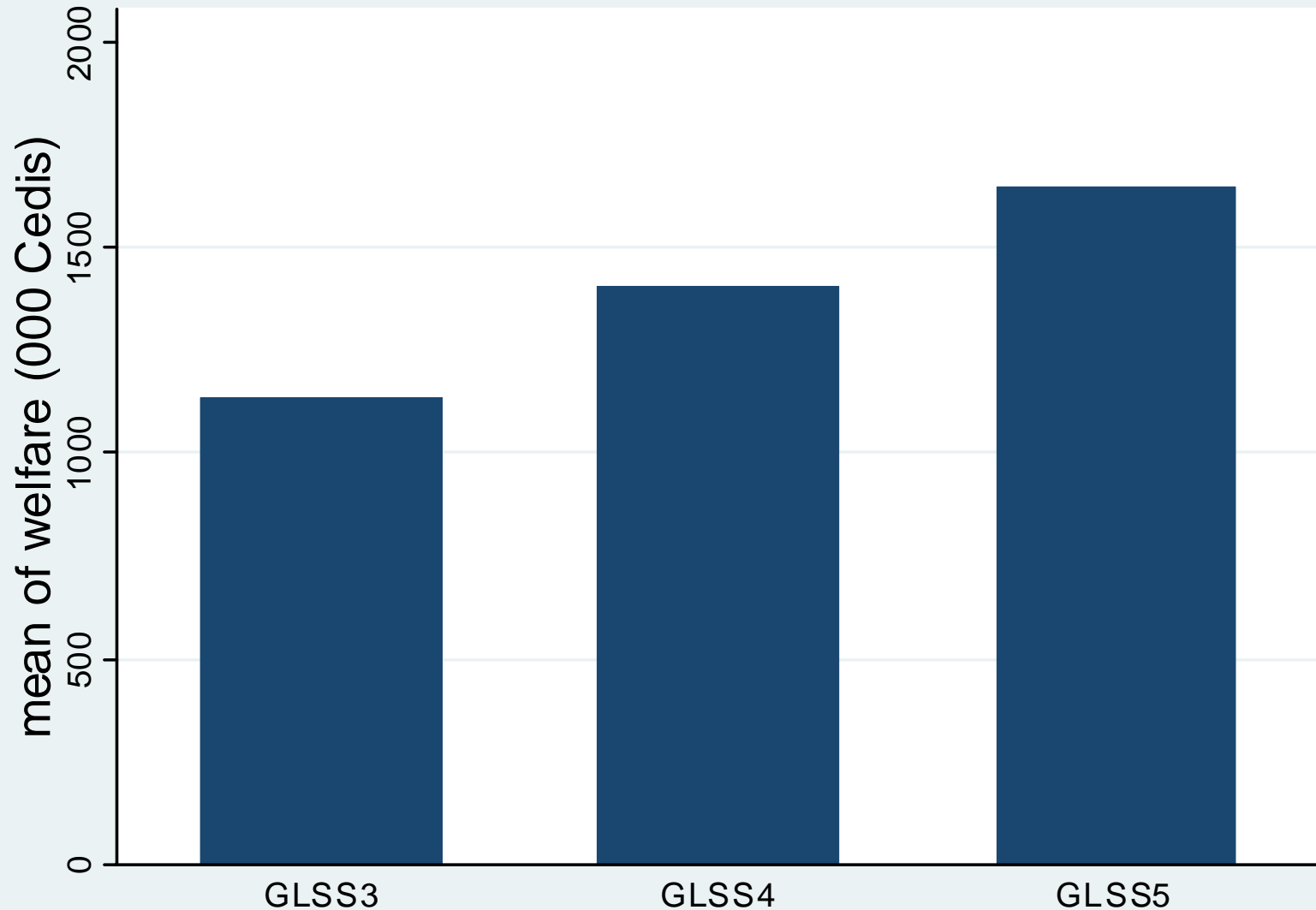
Key Questions:

- **What were the key trends in educational access and living standards in Ghana?**
- **What welfare benefits were associated with educational access/attainment?**
- **Who gained access/was excluded and how might these patterns be explained?**

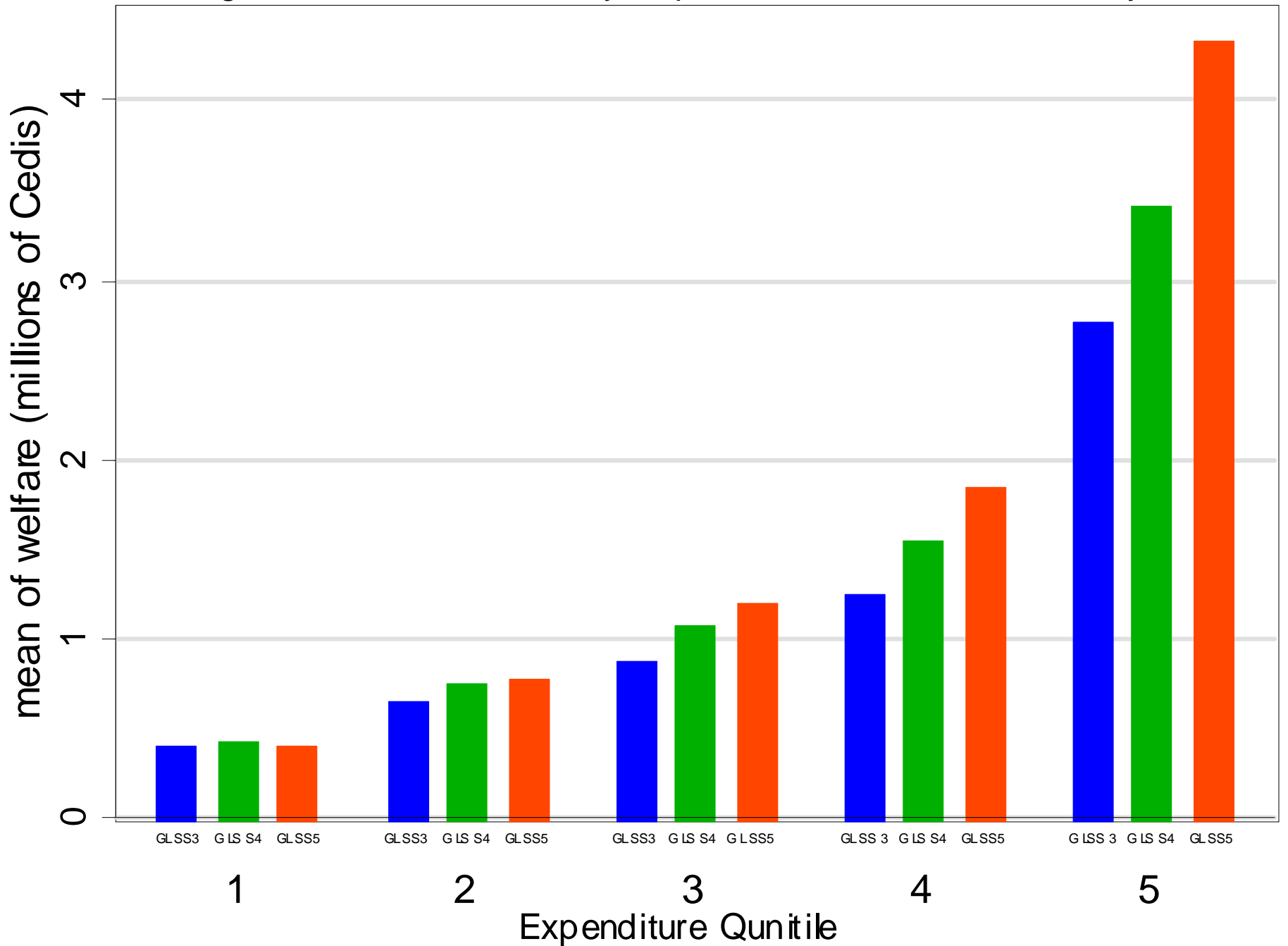
Measuring Living Standards: Household Economic Welfare

- **Absolute measure of household expenditure intended to equate to calorific consumption needs (for the purposes of poverty assessment)**
- **Calculated per capita but using a scale for children to account for age in determining household calorific need equivalence**
- **Corrected for cost of living by region and point in time**
- **Measured in 1999 Ghanaian Cedis at the Accra cost of living**

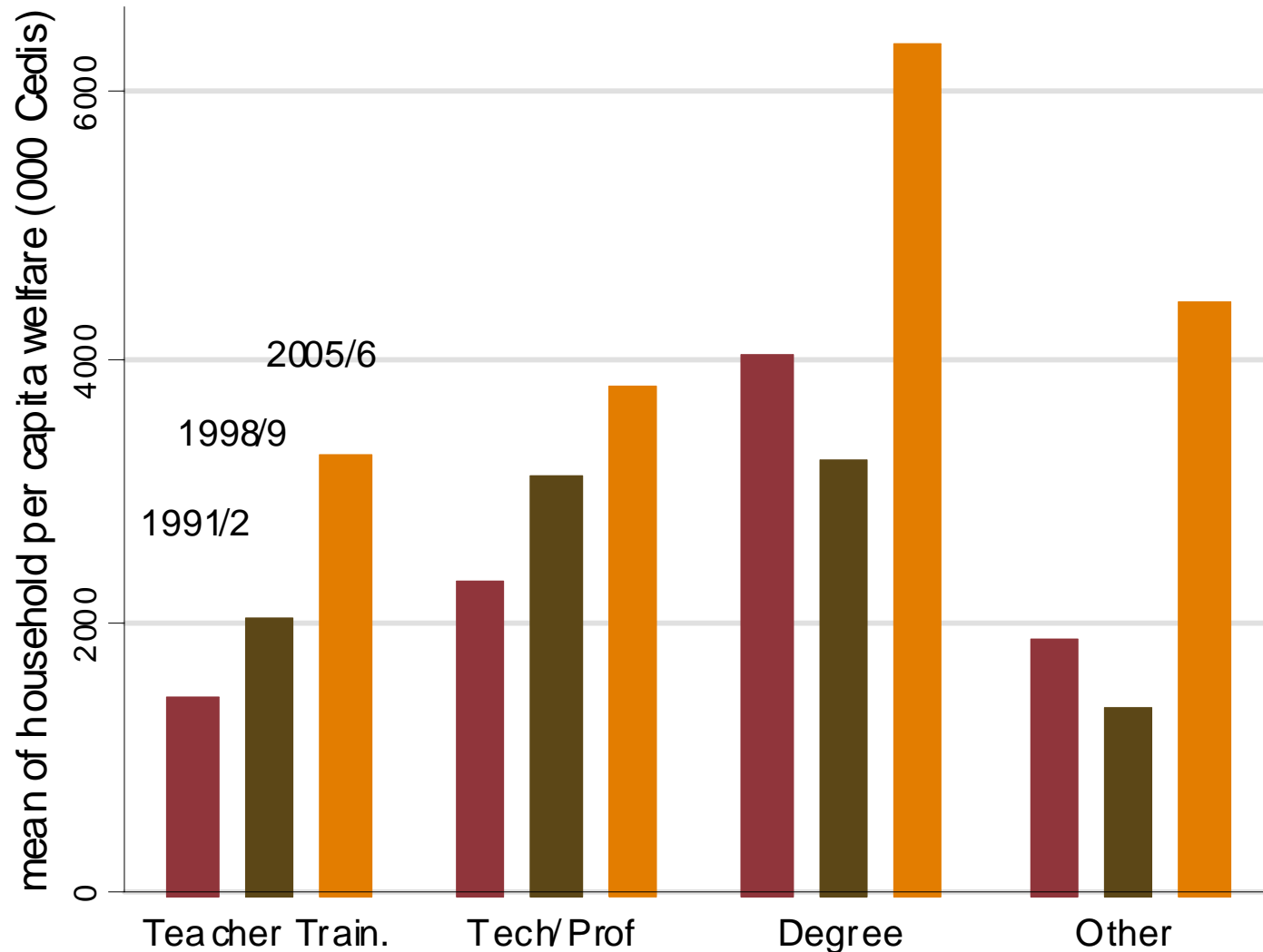
Trends in Household Welfare (Consumption Expenditure) 1991-2006



Average Household Welfare by Expenditure Quintile and Survey Round



Welfare in well educated households improved markedly

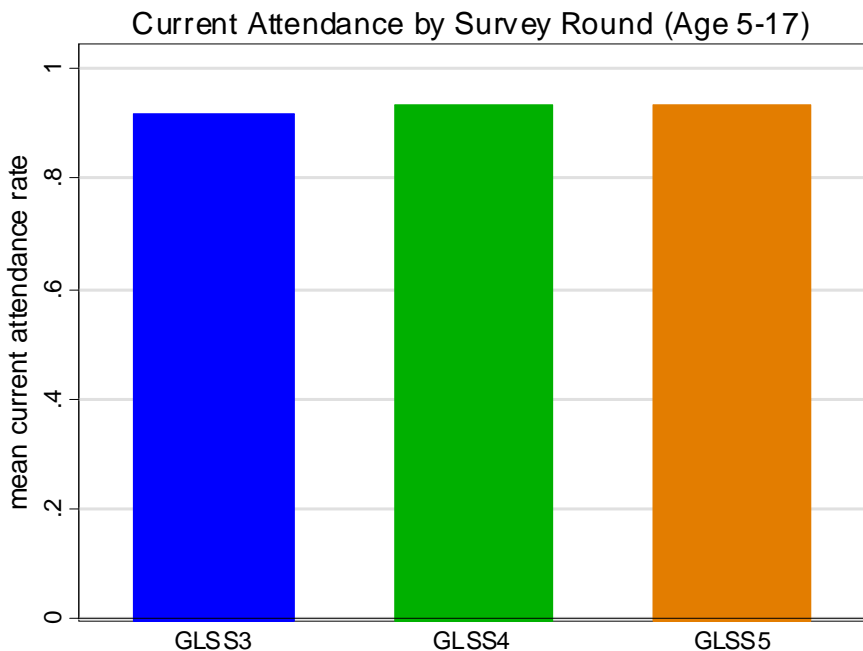
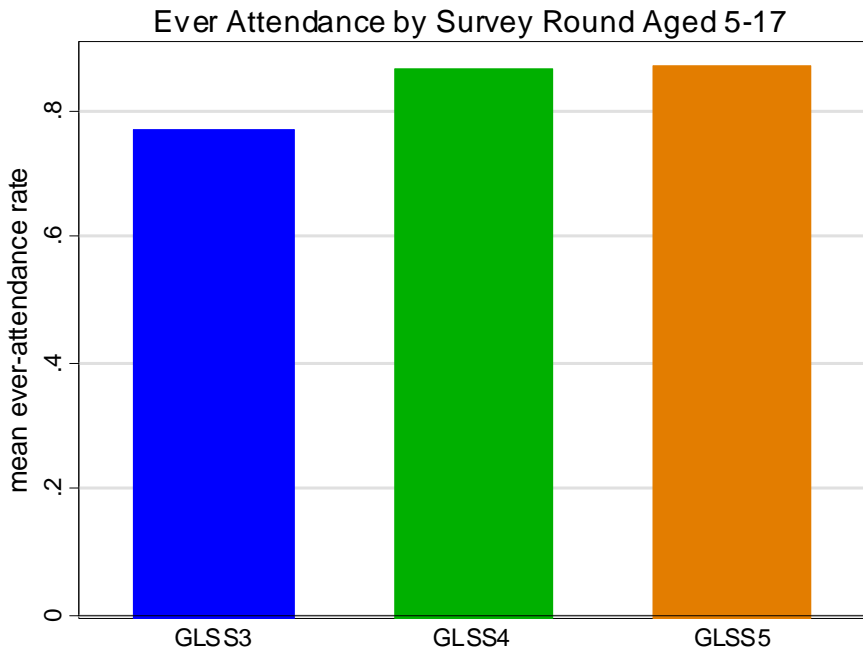


Trends in Household Welfare

- **Per capita household welfare gains were progressively larger in both absolute and relative terms for each successive expenditure quintile.**
- **Per capita welfare in households where the head held a degree or professional qualification improved disproportionately over the period**
- **These trends reflect both changes in expenditure and in household size/dependency. For example, the mean household size in the lowest expenditure quintile rose from 6.57 to 6.70 between 1991 and 2006 whereas in the highest quintile it fell from 2.86 to 2.52.**

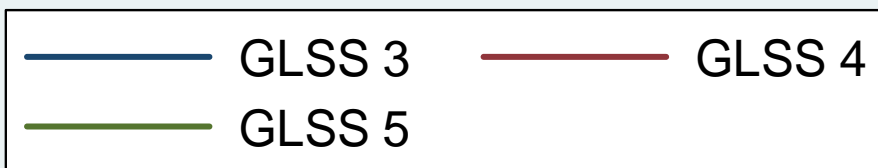
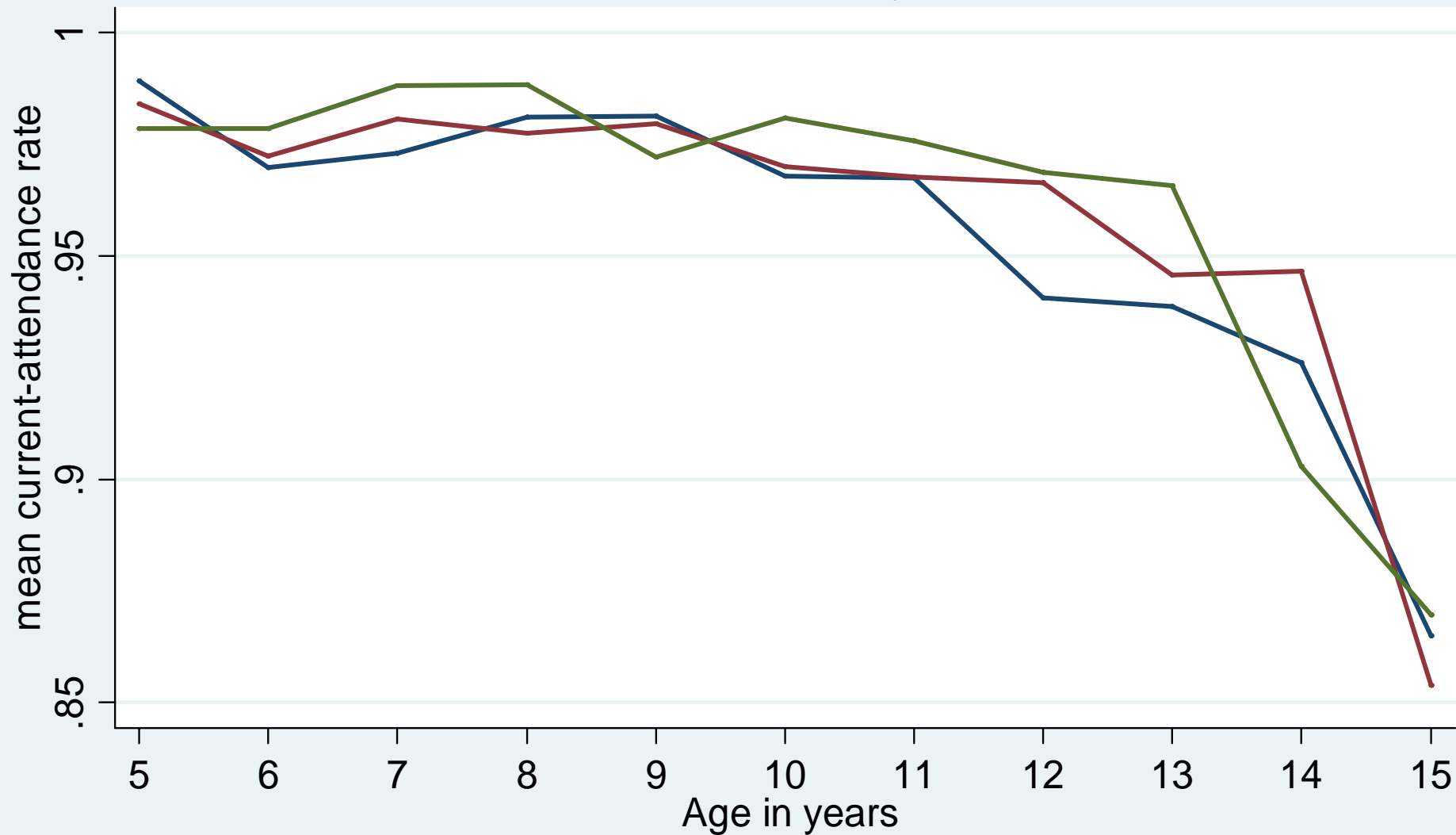
Trends in Educational Access 1991-2006

Ever-attended school



Currently attending (of those who had ever attended)

Current-attendance of 5-15 year olds GLSS3-5



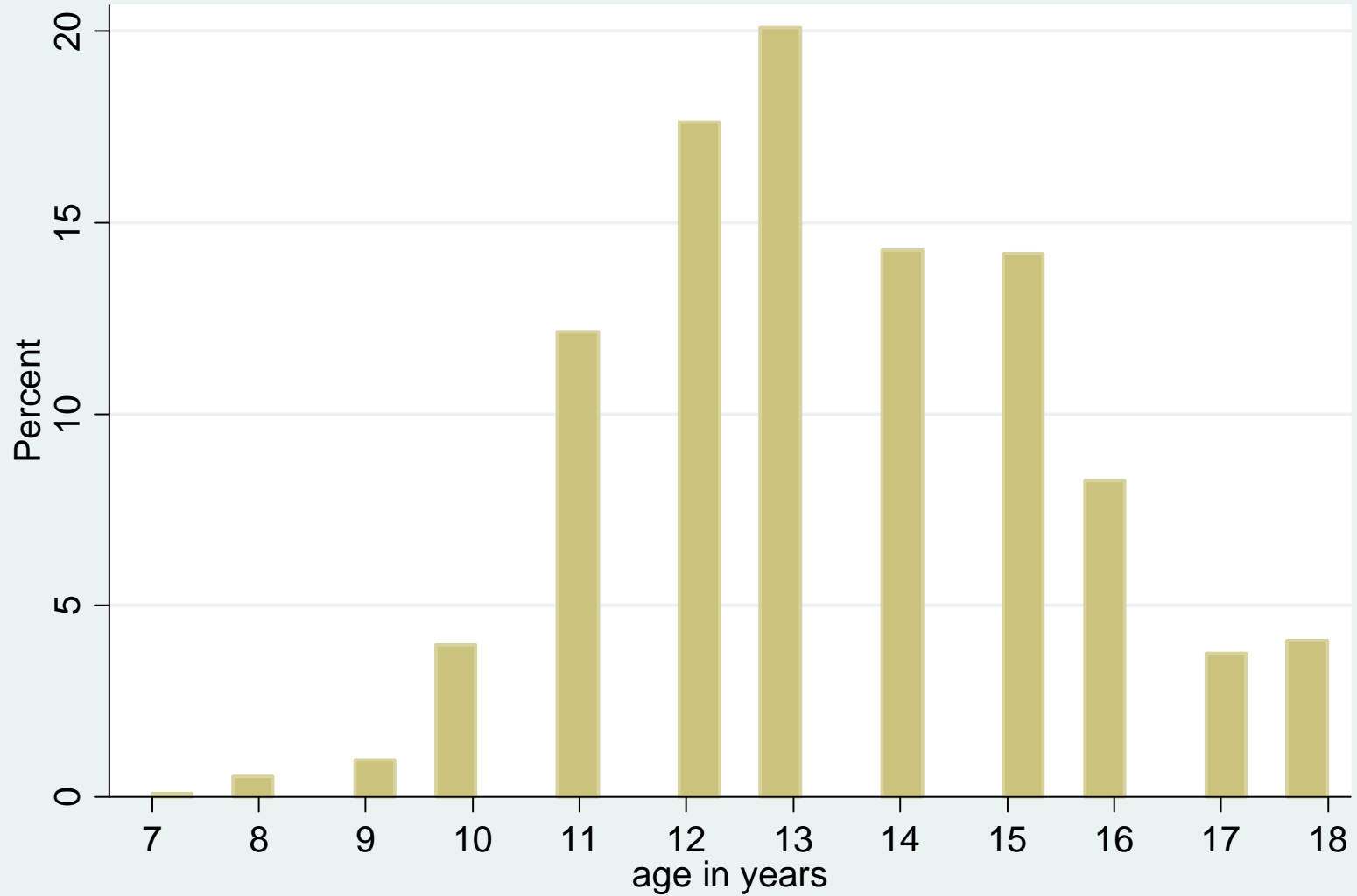
Primary Completion Rates 1991-2006

Age	GLSS3	GLSS4	GLSS5
11	0.07	0.07	0.02
12	0.17	0.20	0.11
13	0.35	0.42	0.28
14	0.51	0.54	0.44
15	0.58	0.60	0.53
16	0.68	0.73	0.65
17	0.74	0.80	0.73

Appears to be little to suggest either that a greater proportion of children are completing primary school or that those who do complete are completing earlier

Age and Enrolment

Enrolment in Primary Grade 6 by Age (GLSS 5)

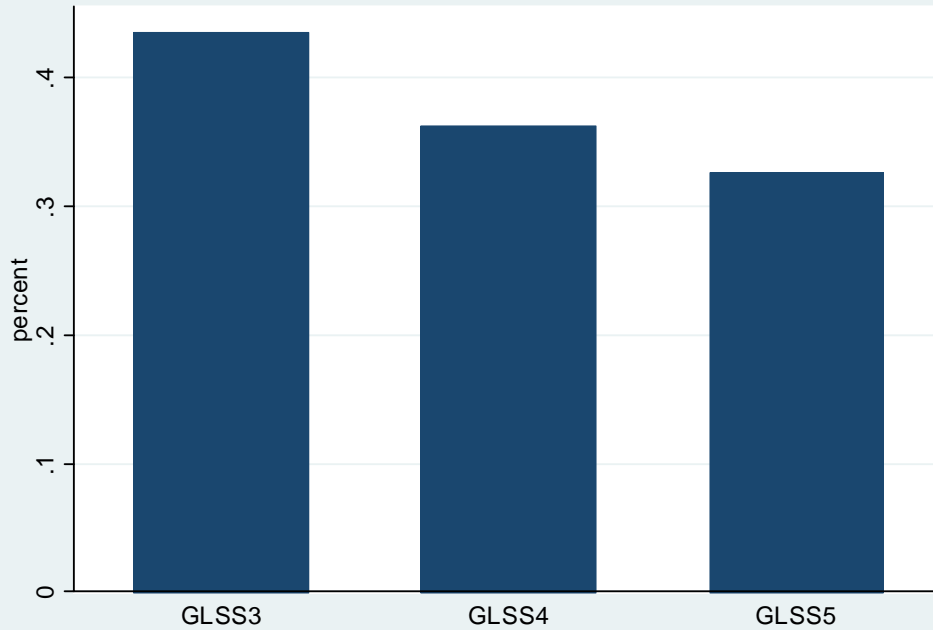


Lower Secondary Completion Rates 1991-2006

Age	GLSS3	GLSS4	GLSS5
14	0.08	0.05	0.04
15	0.14	0.17	0.11
16	0.30	0.32	0.22
17	0.44	0.51	0.40
18	0.46	0.53	0.48
19	0.55	0.62	0.57
20	0.49	0.58	0.53

Again, little to suggest substantial change in completion or age at completion

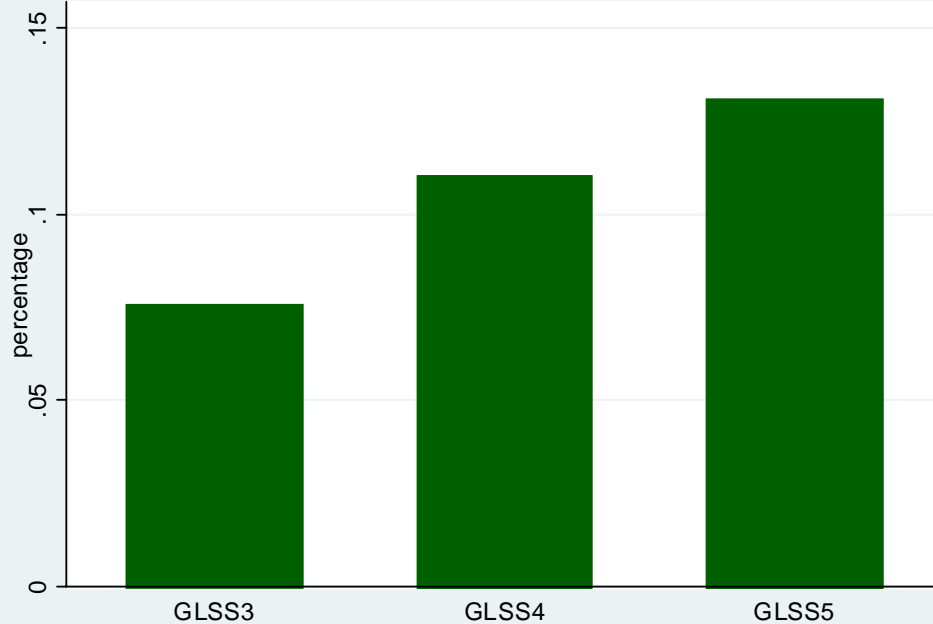
Adult Household Members With No Education



Trends in Attainment

**No education
(all)**

Adults 18-35 With Senior Secondary or Higher Qualifications



**SSS and higher
(aged 18-35)**

Association Between Household Welfare and Education of HHH (Partial Correlations)

	(1) <i>GLSS3</i> (1991/2)	(2) <i>GLSS4</i> (1998/9)	(3) <i>GLSS5</i> (2005/6)
No education (never been)	ref	ref	ref
Some education (been to school)	0.126*** (0.0335)	0.271*** (0.0483)	0.409*** (0.0351)
Middle school quals	0.361*** (0.0330)	0.443*** (0.0580)	0.641*** (0.0406)
Vocational/comm quals	0.554*** (0.0896)	0.633*** (0.0958)	1.053*** (0.0840)
O level	0.667*** (0.0638)	0.755*** (0.0753)	0.872*** (0.0618)
A level / SSS	1.089*** (0.0834)	0.942*** (0.0868)	1.080*** (0.0610)
Teacher training	0.307*** (0.0657)	0.516*** (0.0873)	1.024*** (0.0689)
Technical/professional	0.613*** (0.130)	0.869*** (0.0891)	1.119*** (0.0579)
Degree	1.187*** (0.163)	1.041*** (0.0997)	1.551*** (0.0885)
Constant	13.72*** (0.0282)	13.81*** (0.0458)	13.78*** (0.0363)
Observations	4516	5989	8682
R-squared	0.102	0.133	0.204

Association with controls for context, household assets and characteristics

	GLSS 3	GLSS 4	GLSS 5
No education (never been)	ref	ref	ref
Some education (been to school)	0.0258 (0.0215)	0.0994*** (0.0192)	0.0762*** (0.000591)
Middle school quals	0.181*** (0.0211)	0.173*** (0.0176)	0.193*** (0.000594)
Vocational/comm. quals	0.275*** (0.0627)	0.219*** (0.0542)	0.372*** (0.00157)
O level	0.275*** (0.0407)	0.308*** (0.0320)	0.309*** (0.00133)
A level / SSS	0.595*** (0.0784)	0.296*** (0.0431)	0.357*** (0.00118)
Teacher training	0.254*** (0.0545)	0.369*** (0.0402)	0.575*** (0.00155)
Technical/professional	0.378*** (0.0668)	0.482*** (0.0340)	0.535*** (0.00110)
Degree	0.675*** (0.0884)	0.575*** (0.0718)	0.930*** (0.00170)
Other qual	0.181 (0.135)	0.118 (0.0769)	0.697*** (0.00372)
Constant	13.82*** (0.130)	13.85*** (0.138)	13.56*** (0.00348)
Observations	4486	5926	8230

Interpretation

- **With appropriate controls, equation may be considered a ‘household consumption function’ which estimates the ‘effects’ of household assets on household consumption, given controls for contextual factors and given current asset levels (including human capital).**
- **Over time, however, asset levels are co-determined with welfare. For example, wealthier households may invest more in their children’s education, accumulating greater levels of human capital and potentially increasing welfare further.**

Investigating Access and Exclusion: The CREATE Model

Zones of Exclusion	
1	never enrolled in school
2	dropped out of primary school
4	completed primary, no further access
5	dropped out of lower secondary school



Consortium for Research
on Educational Access,
Transitions and Equity

Investigating Access

- **Issues of supply – e.g. sufficient school places? adequate quality? Appropriate provision?**
- **Issues of demand – do households demand basic education for their children? How do the costs (direct and indirect) compare with benefits? e.g. income from child labour / benefit from unpaid work (domestic help/looking after younger children)**

Theoretical Model: The Decision to Send a Child to School

- **Cost-benefit analysis framework**
- **Becker's (1968) 'household production function'**
- **Household decision making assumed to be 'utility maximising' so that decisions aim at maximising household welfare within cost constraints**


Modelling Approach

- **Probit regression model to estimate the probability that a child (i) has ever attended school (ii) has not dropped out of school given certain characteristics**
- **Multinomial logistic regression to estimate the ‘odds’ that a child is ‘excluded’ into one of the zones of the CREATE model**

Key Child Characteristics

- **Gender**
 - **Age (5-17)**
 - **Type of work undertaken (paid /self-employed / domestic)**
 - **Relationship to the household head (son/daughter / grandchild / non-relative?)**
- 
- A group of approximately ten people, including men, women, and children, are seated on colorful plastic chairs (purple, blue, and white) arranged in a circle on a grassy area. They appear to be engaged in a group discussion or meeting. In the background, there is a light-colored building with a window and some trees under a clear sky.

Key Household Characteristics

- **Household head's gender, age**
 - **Household Head's education / occupation**
 - **Level of household economic welfare**
 - **Household size and number/type of dependents**
 - **Household assets (land, livestock)**
- 
- A background image showing a rural outdoor setting. In the foreground, a white cow is grazing on green grass. A dirt path leads towards a brick building in the background. Several people are standing near the building, and there are trees and a clear sky in the distance.

Key Contextual Factors

- **Region of residence and urban / rural location may indicate industry / opportunity / availability of schools etc.**
- **Time factor (1991/1998/2005) – may indicate effects of policies over the period?**

Example Preliminary Results: Ever Attendance

Significant Positive Effects

- **Close relative of head**
- **Female household head**
- **Higher household welfare**
- **Head's education and employment in public sector**
- **Time (policy?)**

Significant Negative Effects

- **Female gender (effect falling)**
- **Child labour (possibly rising)**
- **Northern locations**

Example Preliminary Results: Not Dropping Out

Significant Positive Effects

- **Close relative of head**
- **Female head of household**
- **Higher household welfare**
- *Smaller household Size*
- *Lower proportion of children under 7*

Significant Negative Effects

- **Female gender (falling)**
- **Child labour (rising)**
- *Child illness*

Possible Interpretations

- **Improving gender equity position consistent with policy**
- **Location and time more important is determining whether a child ever went to school than whether they stayed in.**
- **Intra-household factors (especially young children) more important with regard to a child staying in school than ever attending.**

Example Preliminary Results: Multinomial Logit (odds ratios)

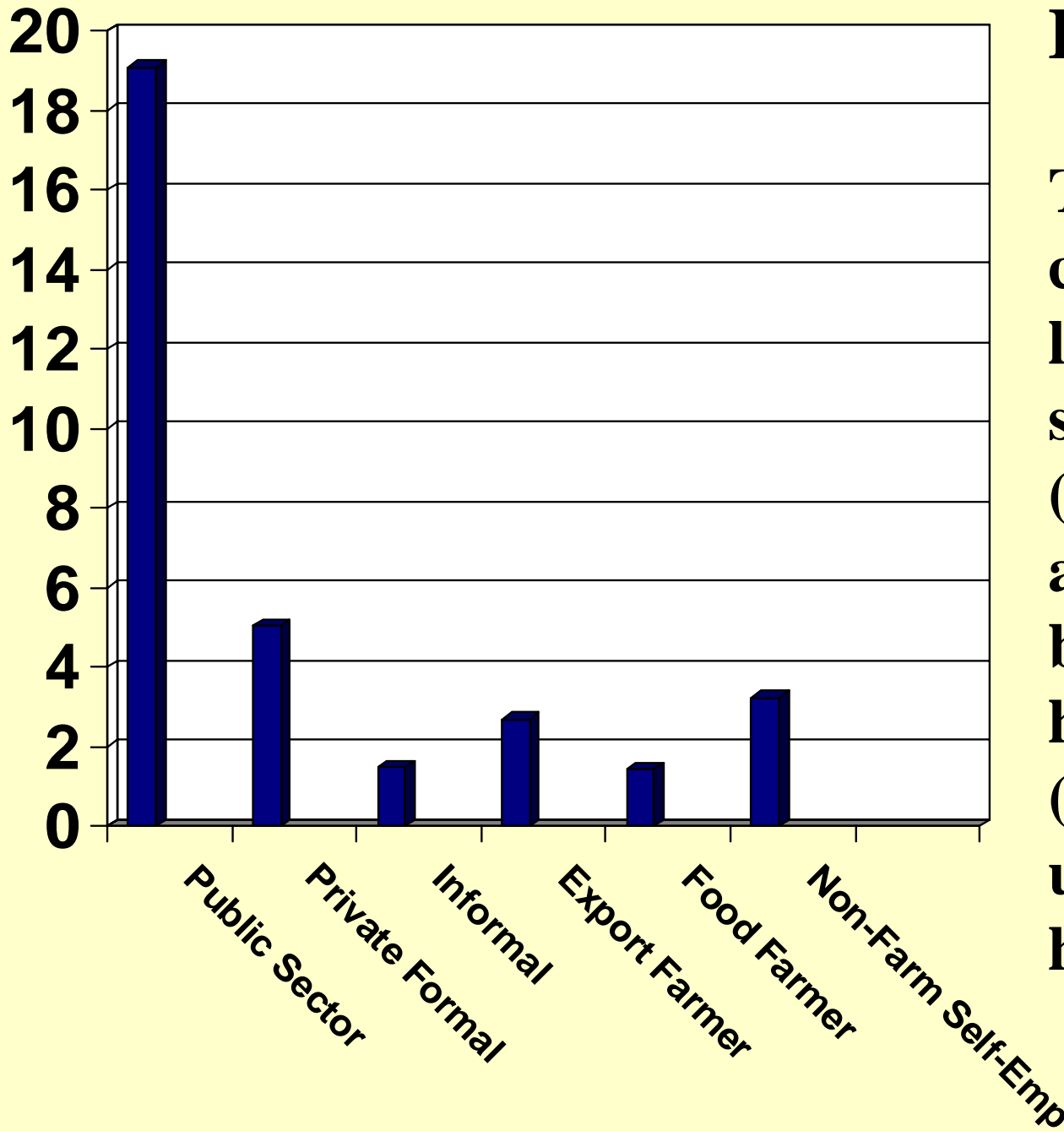
Exclusion Zone	<i>Never Attender</i> Zone 1	<i>Primary drop out</i> Zone 2	<i>Primary Completer Only</i> Zone 4	<i>Lower Sec Drop out</i> Zone 5	<i>Lower Sec Completer</i>
sex	Reference Category	1.540*** (0.127)	1.654*** (0.204)	1.549*** (0.174)	1.202 (0.151)
Other Relative		0.515*** (0.0770)	0.333*** (0.0679)	0.304*** (0.0611)	0.260*** (0.0568)
Other non-relative		0.467*** (0.129)	0.369*** (0.119)	0.260*** (0.0827)	0.175*** (0.0682)
Public forml empl		4.708*** (2.545)	8.382*** (5.556)	11.80*** (6.723)	19.07*** (12.77)
Private formal empl		2.916** (1.312)	6.366*** (3.848)	6.307*** (3.351)	5.054*** (3.141)
Non-farm self empl		2.427* (1.113)	3.773** (2.269)	3.873*** (1.950)	3.238** (1.880)
Inwelfare		1.863*** (0.233)	2.564*** (0.404)	3.021*** (0.481)	4.061*** (0.715)
urban		1.148 (0.245)	1.521* (0.362)	1.584* (0.382)	2.518*** (0.676)
Observations		11791	11791	11791	11791
Pseudo R-squared		0.3883			

Reference categories: male / son or daughter of head/ not working (child) / not working (adult)

Example Preliminary Results: Zones of Exclusion

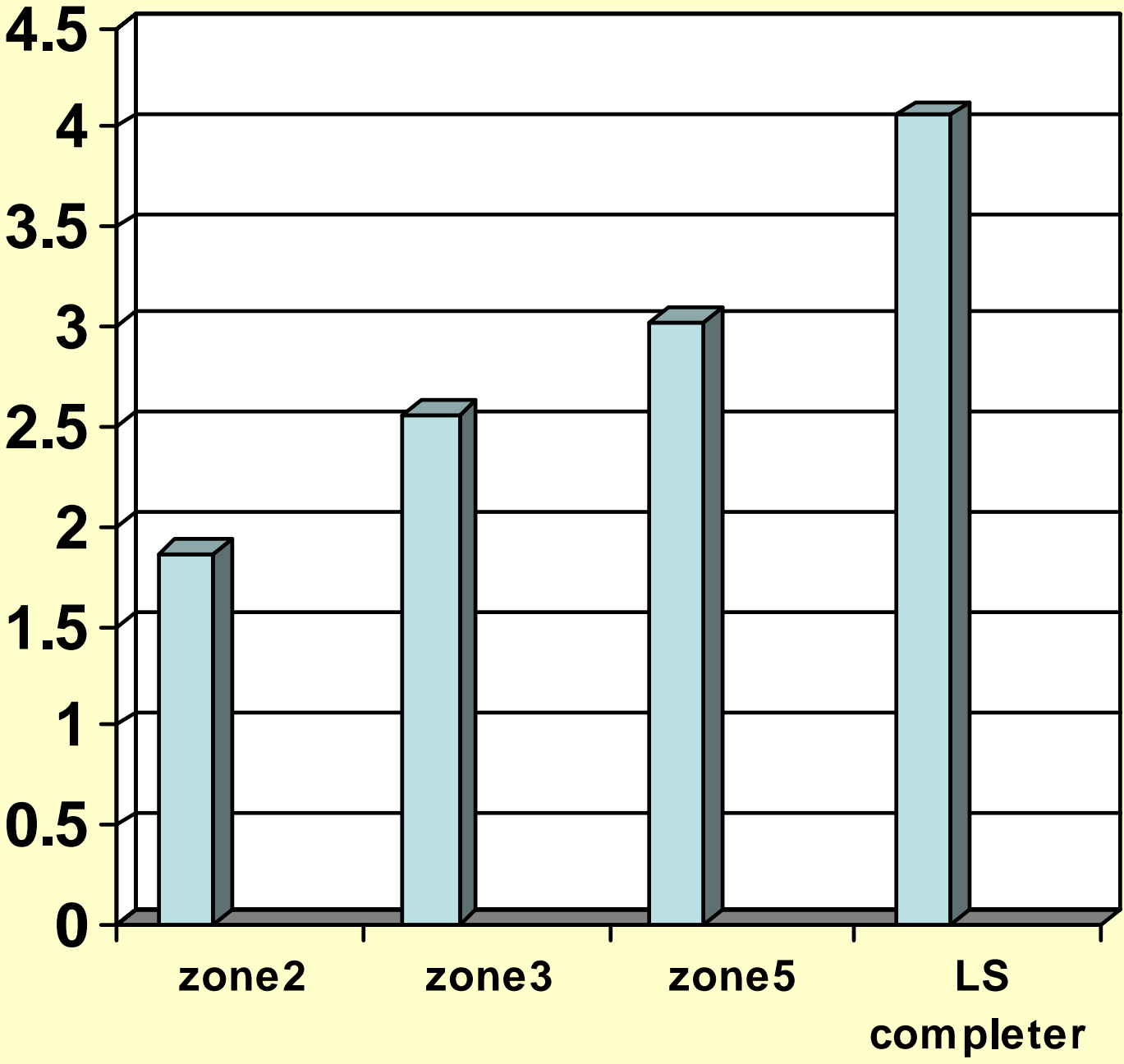
All results relative to Zone 1(never-attenders)

- Primary drop outs, primary completers (who do not continue), lower secondary drop outs and lower secondary completers, perhaps unsurprisingly, represent increasingly privileged groups**
- Boys more likely to be drop outs or not go on to secondary but girls equally likely to complete lower secondary school**
- Children not the son/daughter of the head and/or who work (especially in paid work) have decreasing odds of being in the higher access groups**
- Children of parents in formal employment and who live in higher welfare households have high and increasing odds of being in higher access groups**
- Large and increasing regional and (positive) urban effects as access level increases**
- Apparently no effect of household size/composition**



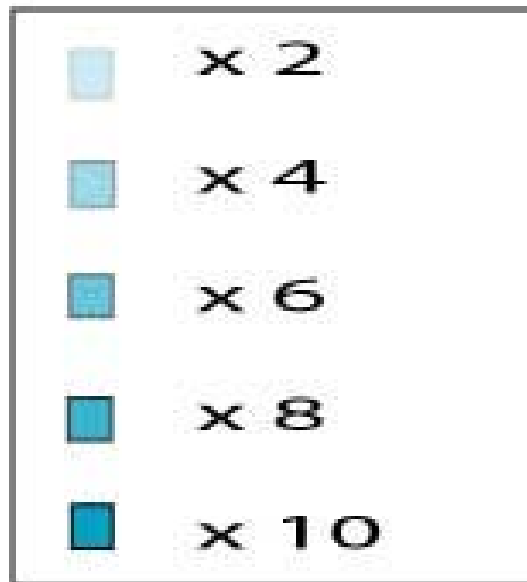
Example 1:

The odds of a child completing lower secondary school (relative to never-attending school) by household head's occupation (relative to unemployed heads)



**Example 2:
‘Effect’ of household welfare on odds of access and exclusion : odds ratios associated with an increase in per capita welfare equivalent to the mean level (of around £200)**

**Example 3:
Odds of completing
primary school
(relative to Upper
West region; with
child/household
controls)**



Conclusions

- **Initial access rates high but not increasing (since 1999); remaining exclusion associated with poverty, region, work**
- **Overall drop out rates stable (since 1991) associated additionally with household composition/dependency, region less important**
- **A number of ‘determinants’ of access/exclusion by zone exert increasing influence as levels of access rise, suggesting educational ladder may be progressively harder to climb for the least advantaged – particularly those in certain regions, rural areas, poorer households and paid work as well as those in households involved in food farming or the informal sector.**



End

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