

Worms at Work: Long-run Impacts of Child Health Gains^{*}

1. Introduction

¹ <http://www.nytimes.com/2008/01/05/business/worldbusiness/05sweatshop.html>

et al.

et al.

et al.

in utero

et al.

et al.,

et al.

et al.

et al.

2. A model of health investment with spillovers (preliminary)

2.1 Health investment, work hours and deworming subsidies

N

t

$Y(l)$

x

t

i

t

E_t

i

t

w

$$G(m)$$

m

Proposition 1: If there are competitive labor markets, so _____, then the fraction of time spent working is _____ regardless of the wage and the time endowment in every period after the initial period.

—

Proposition 2: If there are competitive labor markets _____, then the proportion of the population that deworms at a given price of deworming medicine _____ is F — —

.

x

$$x^*w$$

i

x

p

N

DWL

— —

Proposition 3: Consider two different levels of subsidies, s_1 and s_2 where the government faces a deadweight loss (), it prefers subsidy s_2 to s_1 if:

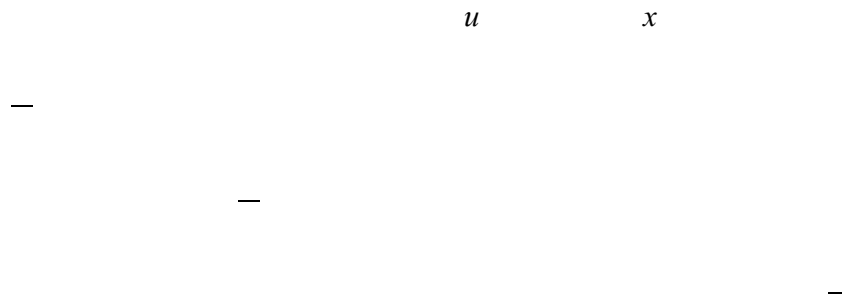
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Corollary 1:

—

2.2 Responses in agriculture versus other sectors

Proposition 4: In the absence of land and labor markets, agriculturalists will work a constant fraction of their time ———, regardless of their total stock of time or land.



Corollary 2. Suppose agent i works z hours more after an intervention, before which her utility was u . By assuming perfect labor markets, one would then calculate their new utility as ———, which is below the true new utility of u ———

Proposition 5: Increasing deworming subsidies (weakly) increases participation in non-agricultural work.

3. Background

3.1 The context

et al

et al.

et al.

et al.

Plasmodium

et al.

et al.

et al

et al.

3.2 The Primary School Deworming Program (PSDP)

et al.

et al.

3.3 Kenya Life Panel Survey (KLPS)

et al.

et al.

et al

4. Deworming impacts on health, education and labor market outcomes

4.1 Estimation strategy

et al.

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4.2 Impacts on health and education

et

al. *et al.*

4.3 Deworming Impacts on Labor Supply

4.4 Impacts on employment sector, occupation, and migration

4.5 Impacts on production and living standards

4.6 Restricted Estimates

5. Socially Optimal Subsidies for Deworming

5.1 Calibrating the health investment model

m_i

—

5.2 Deworming as a human capital investment

6. Conclusion

References

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Journal of Development Economics

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parasitic diseases in St. Lucia *Disease and economic development: The impact of*
Repositioning nutrition as central to development: a strategy for large-scale
action
Model Describing Information. Drugs Used in Parasitic
Diseases.

Table 1:

Panel A: Baseline summary statistics

Panel B: Sample attrition, KLPS

Table 2:

Panel A: Health outcomes during 1999-2001

Panel B: Health and nutrition outcomes, KLPS (2007-09)

Panel C: School participation, enrollment and attainment

Panel D: Test scores

Table 3:

Panel A: Labor Supply

Among those with positive hours worked:

Panel B: Health related absenteeism (negative binomial results)

Table 4:

Panel A: Employment Sector^a

Panel B: Occupation in Wage Employment

Table 5:

Panel A: Full sample

Panel B: Individuals not in school

Table 6:

Table 7:

Panel A: Wage earner subsample

Panel B: Wage earner since 2007 subsample

Panel C: Self-employed (non-agriculture)

Panel D: Full sample earnings (wages and self-employment)

Panel E: Agriculture

Table 8:

2

Table 10:

Panel A: Health investment model calibration results

Panel B: Deworming as a human capital investment

Figure 1:

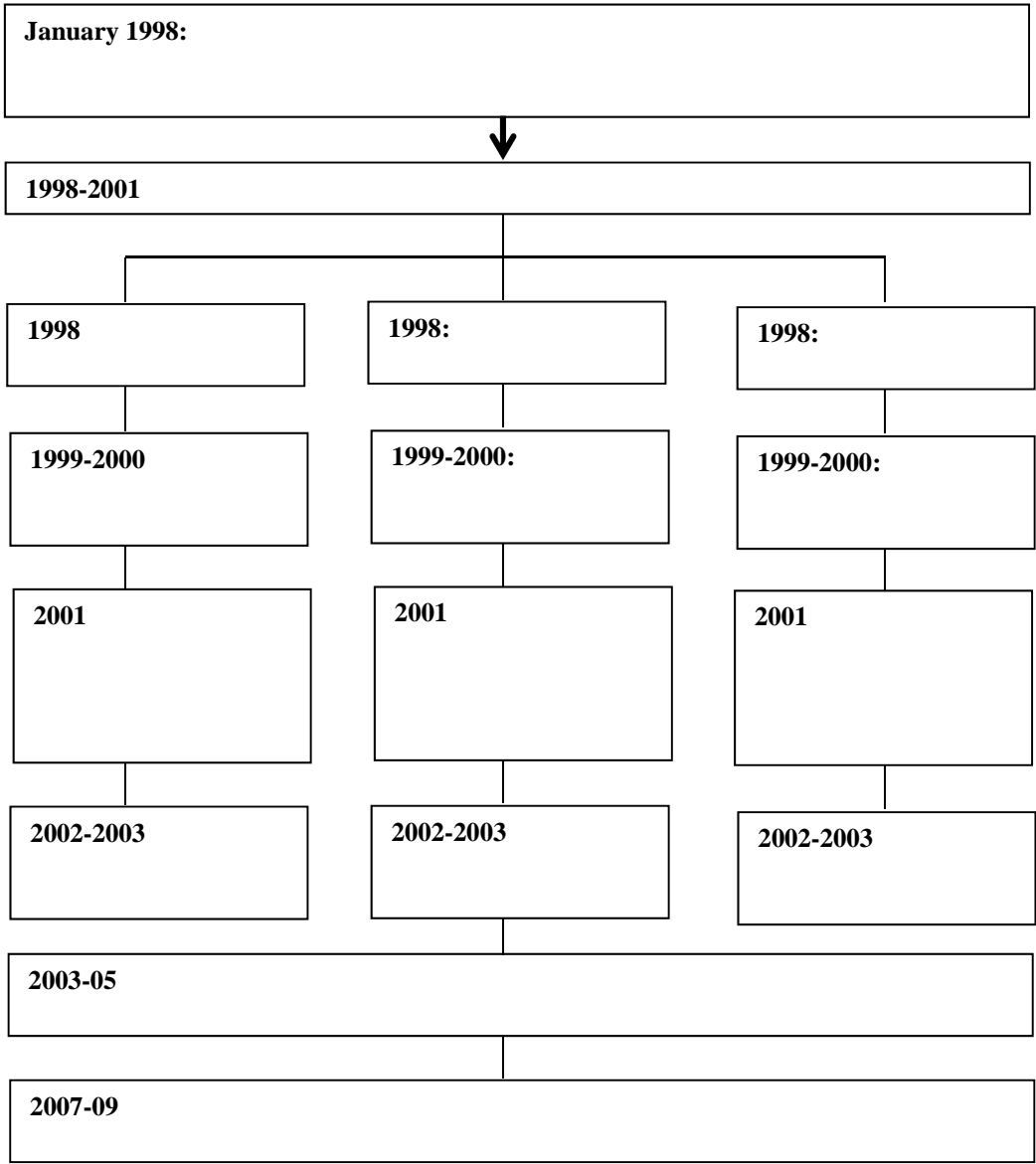


Figure 2:

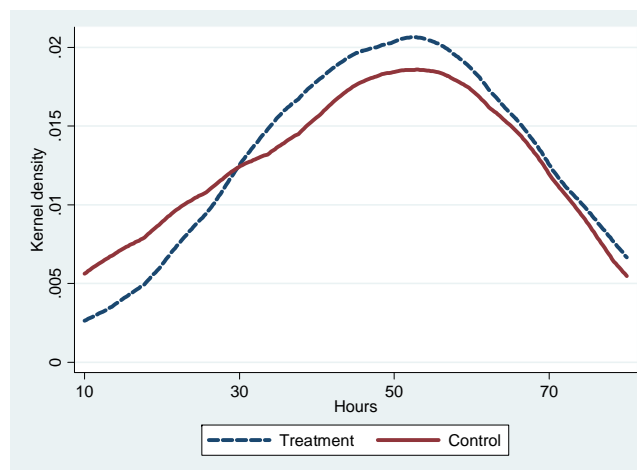
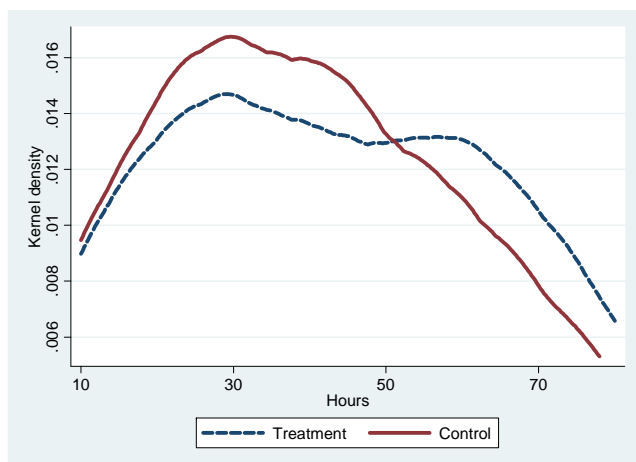
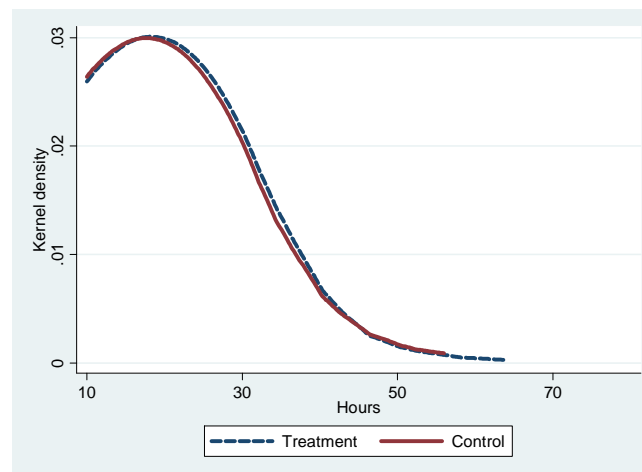
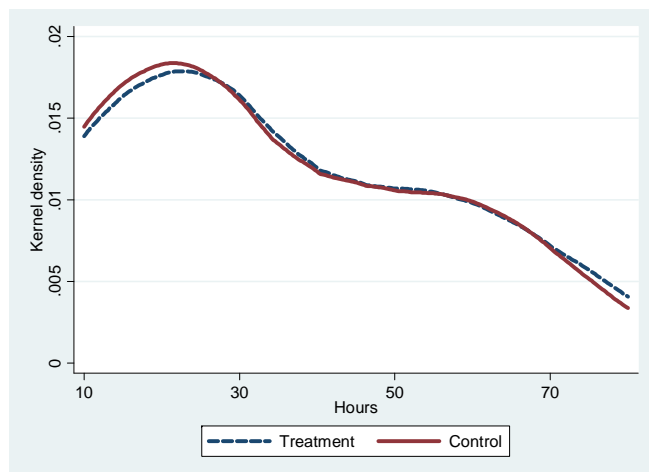
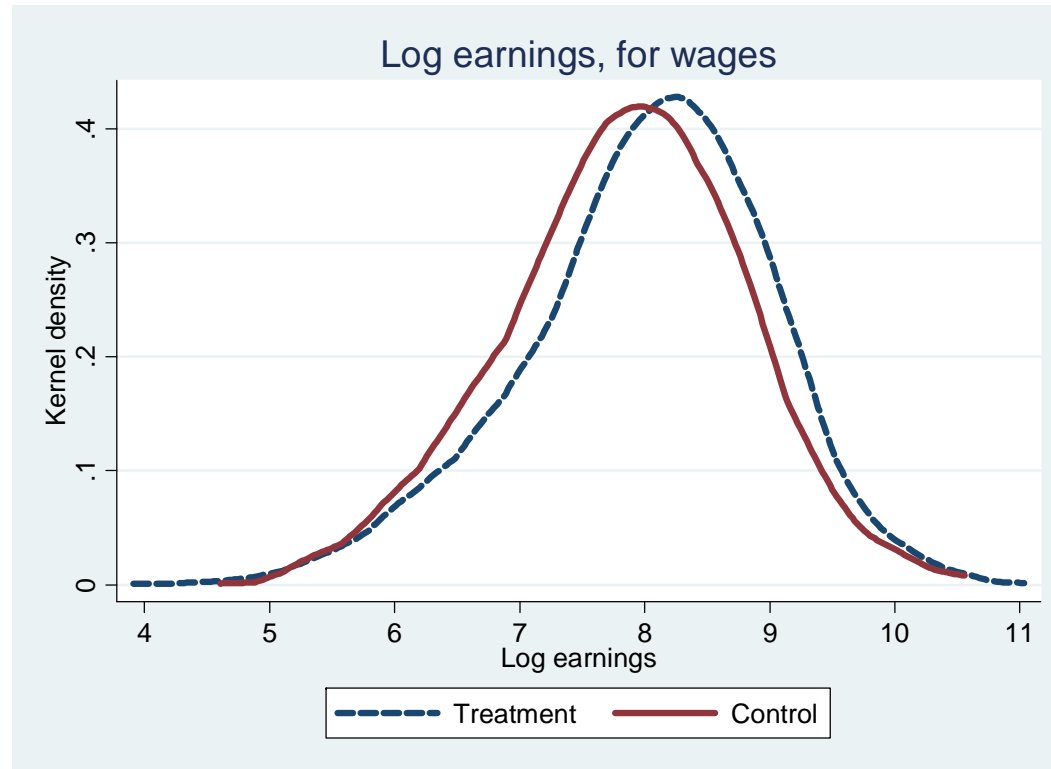


Figure 3:

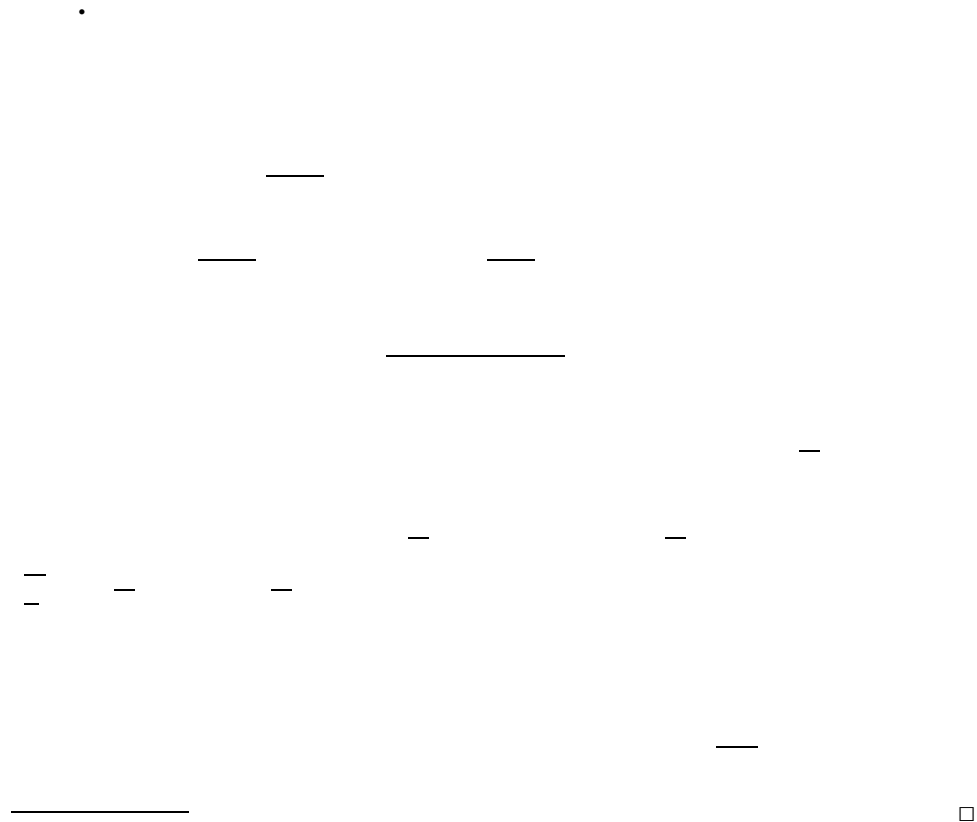


Supplementary Appendix A: Theory appendix (not intended for publication)

Proposition 1: If there are competitive labor markets, so $\frac{w}{p} = 1$, then the fraction of time spent working is $\frac{1}{2}$ regardless of the wage and the time endowment in every period after the initial period.

□

Proposition 2: If there are competitive labor markets so $\frac{w}{p} = 1$, then the proportion of the population who deworms at a given price of deworming medicine p_d is $F\left(\frac{p_d}{2}\right) - \frac{1}{2}$.



□

Proposition 3: Consider two different levels of subsidies, s_1 and s_2 where $s_2 > s_1$. If the government faces a deadweight loss ($DL > 0$), it prefers subsidy s_2 to s_1 if:

$$s_2 > s_1$$

$$\frac{\gamma}{\delta}$$

□

Corollary 1:

$$\gamma$$

—

$$\frac{\gamma}{\delta}$$

□

Corollary 3: If a given increase in subsidy levels does not increase take up, the lower subsidy yields greater social welfare.

□

Proposition 4: In the absence of land and labor markets, agriculturalists will work a constant fraction of their time — , regardless of their total stock of time or land.

—

□

Corollary 2. Suppose agent i works z hours more after an intervention, before which their utility was u . By assuming perfect labor markets, one would then calculate their new utility as — , which is below the true new utility of u — —

— — —

□

Proposition 5: Increasing deworming subsidies weakly increases participation in non-agricultural work.

□

Supplementary Appendix B: Research Design Appendix (not intended for publication)

Econometrica

American Economic Journal: Applied Economics

Supplementary Appendix Table A4

Panel A: Dep. var.: School enrollment indicator

Panel B: Dep. var.: Primary school participation

Supplementary Appendix Table A5

Supplementary Appendix Table A6:

Panel A: Benefits (per pupil in the full sample)

Assume only the wage earner subsample has gains:

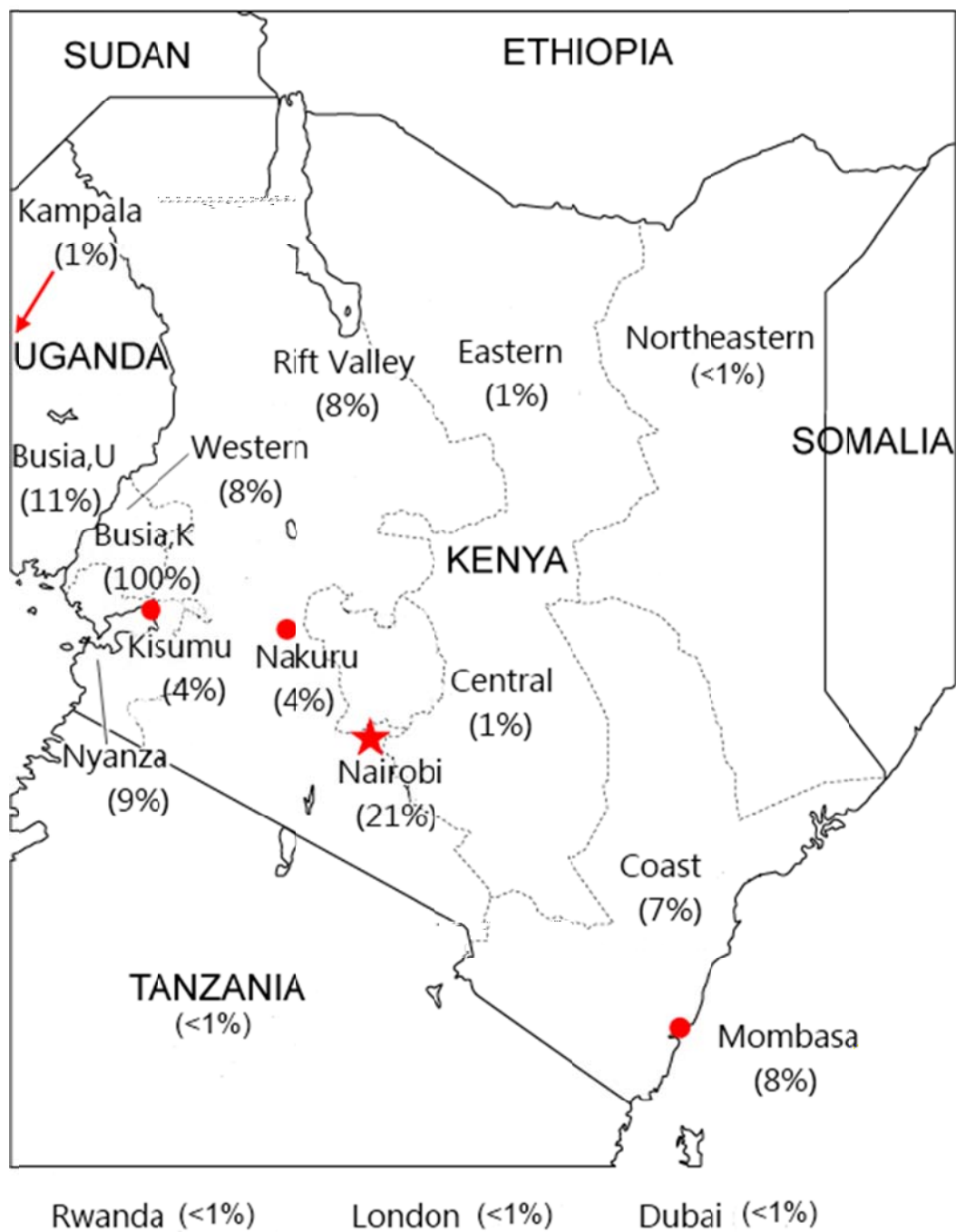
Assume the entire sample has gains:

Panel B: Costs (per pupil in the full sample)**Panel C: Internal rate of return (per annum)**

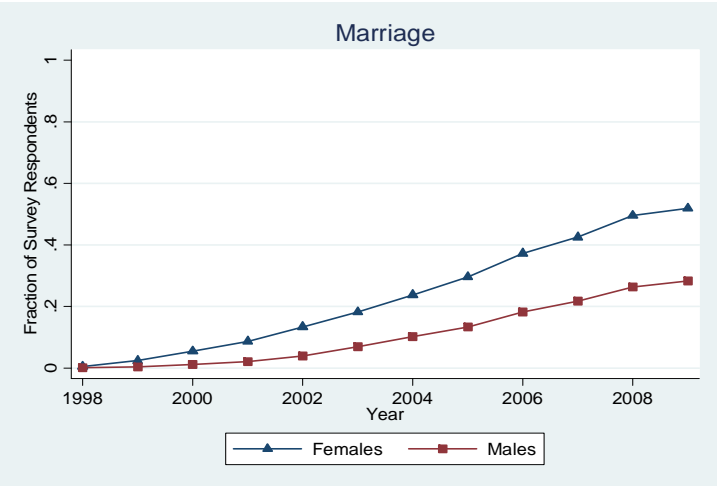
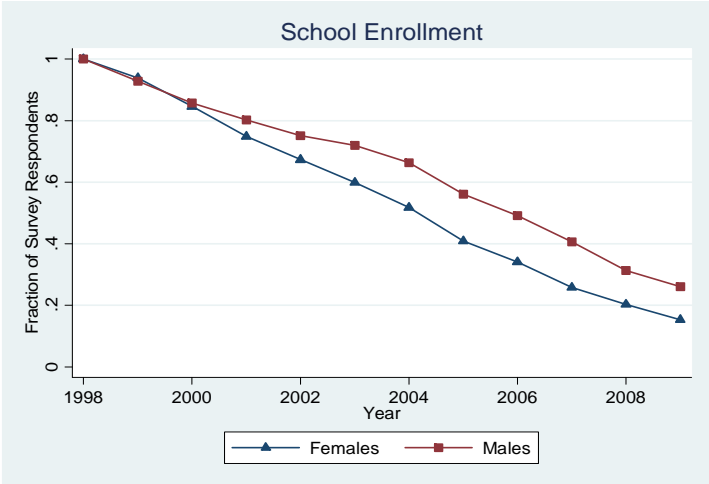
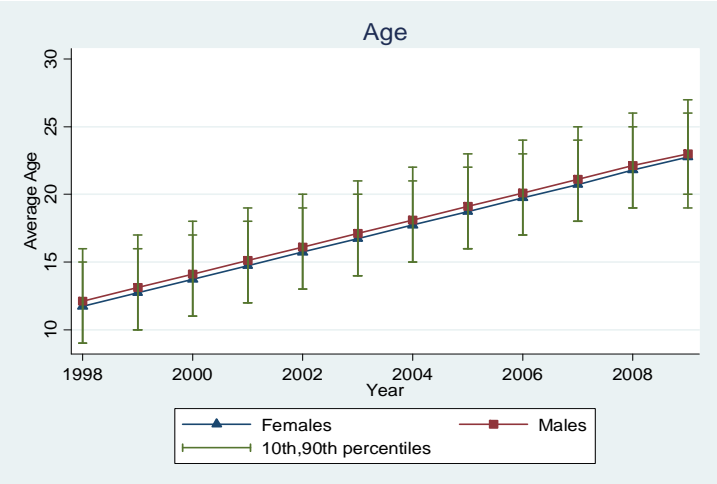
Assume only the wage earner subsample has gains:

Assume the entire sample has gains:

Supplementary Appendix Figure A1



Supplementary Appendix Figure A2:



Supplementary Appendix Figure A3:

