

Cost of a Child

An Economics Perspective

Today's Presentation

1. The OECD, EU and Irish Context
2. Visually describing expenditures in different kinds of households
3. Statistically recovering expenditure on children in different kinds of households
4. Using derived equivalence scales to measure changes in child poverty rates and inequality.
 - Much work remains to be done....this is a three year project (partly CPA funded, more received from other sources); now getting towards the end of year 1; Paul starting a PhD on the topic.

Standard Economics and the Costs of Children

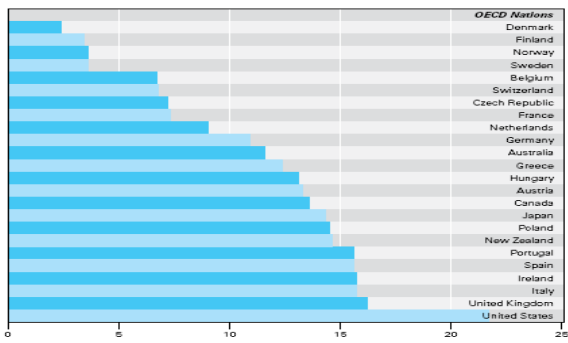
- Why should the state need to worry about how much children cost?
- In an age of available birth control, the net benefits of having children are presumably positive.
- If children are generally a benefit, then is there any economic reason for the state to help parents in funding their growth? **There are no net costs.**

We'll come back to this later.....if there's time....

OECD Countries. Child Well-being.

Dimensions of child well-being	Average ranking position (for all 6 dimensions)	Material well-being	Health and safety	Educational well-being	Family and peer relationships	Behaviours and risks	Subjective well-being
Netherlands	4.2	10	2	6	3	3	1
Sweden	5.0	1	1	5	15	1	7
Denmark	7.2	4	4	8	9	6	12
Finland	7.5	3	3	4	17	7	11
Spain	8.0	12	6	15	8	5	2
Switzerland	8.3	5	9	14	4	12	6
Norway	8.7	2	8	11	10	13	8
Italy	10.0	14	5	20	1	10	10
Ireland	10.2	19	19	7	7	4	5
Belgium	10.7	7	16	1	5	19	16
Germany	11.2	13	11	10	13	11	9
Canada	11.8	6	13	2	18	17	15
Greece	11.8	15	18	16	11	8	3
Poland	12.3	21	15	3	14	2	19
Czech Republic	12.5	11	10	9	19	9	17
France	13.0	9	7	18	12	14	18
Portugal	13.7	16	14	21	2	15	14
Austria	13.8	8	20	19	16	16	4
Hungary	14.5	20	17	13	6	18	13
United States	18.0	17	21	12	20	20	-
United Kingdom	18.2	18	12	17	21	21	20

% children at less than 50% median income



EU. At Risk of Poverty

Table 3.13: The risk of poverty in the European Union

Country	Poverty Risk	Country	Poverty Risk
Portugal	21	Lithuania	15
Slovakia	21	Malta	15
IRELAND	20	France	14
Greece	20	Austria	13
Spain	20	Hungary	12
Italy	19	Netherlands	12
Estonia	18	Denmark	11
United Kingdom	18	Luxembourg	11
Poland	17	Finland	11
Germany	16	Sweden	11
Latvia	16	Slovenia	10
Belgium	15	Czech Rep	8
Cyprus	15	EU-25 Average	16

Sources: CSO, 2006/7, 15; Eurostat, Statistics in Focus 13/2005: 4

Irish Economists' Work on Children

- Conniffe and Keogh (1978)
 - Cost of Children
- Lee and Gibney (1989)
 - Low Income Food Budget
- National Parent Council (1990 & 1991)
 - Cost of Education
- PAUL Project (1991)
 - Cost of Education
- Murphy and Lawless (1992)
 - Welfare family Budgets and Average Income Budgets
- Carney et al (1994)
 - Cost of a child
- Madden.D (2000)
 - The Kids are alright
- Corrigan 2004
 - Child Income Inadequacy

Conniffe and Keogh

Household Composition	Equivalence Scale at 'average income'	Rank
Two Adults with one young child no older children	1.12	Reference Household Age (0 to 4 years)
Two adults no young children one older child	1.16	Age (5 to 14 years)
Two adults two young children no older children	1.15	
Two adults no young children two older children	1.27	
Two adults one young child one older child	1.20	

Carney

	2006 0-6 yrs	7-12yrs	13-18yrs
Low Cost Budget	€ 34.57	€48.09	€ 64.13
Modest-But- Adequate Budget	€ 46.22	€66.12	€ 83.25
	1992 0-6 yrs	7-12yrs	13-18yrs
Low Cost Budget	€ 26.26	€36.17	€ 47.54
Modest-But- Adequate Budget	€ 34.25	€49.12	€ 61.37

Main Types of Benefits

Name of Benefit	Basis of Qualification and Amount
Child benefits	Universal (subject to Habitual Residency) €160 p/m, and €195 from 3 rd child
Family Income Supplement	€480 income limit for one child, plus roughly €100 each per extra child.
Child Dependent Allowances	Payment made in respect of dependent children for both contributory and non-contributory schemes (€22)
One Parent Family Payment	For Lone Parents subject to means-test

The implicit Equivalence Scale is around 35% per child

Costs of Children

- To get a sense of whether this 35% is close to being adequate, it is useful to know something about the "costs" of children.
- Knowing costs of children is especially vital regarding children in poverty, since the effects of market failures are far worse for poor families.
- It is also necessary in the case of separation or divorce: e.g. how much to set child support; who pays?
- Knowing something about these costs is also needed to measure national poverty rates, say, or national rates of inequality.

How are costs of children measured?

- 3 main ways (answering 3 slightly different questions):
 - (i) **Basic needs approach**, Rowntree (1901), often used in practice by state agencies, but not liked in standard economics as it conflicts with the economists' view of welfare as preference satisfaction.
 - (ii) **Expenditure approach**, Rothbarth (1943), very little data directly on who spends what on whom within the household: but expenditures on children are at least partly recoverable using statistical methods; question of time expenditure is also increasingly important.
 - (iii) **Compensation approach** Engel (1895); Rothbarth (1943); Barten (1964); Gorman (1976) uses statistical methods to find how much is needed to maintain parents real standard of living at the same level as that of equivalent couples without children.....what is the "welfare" cost of having children?.

Comparing Approaches

- Often the approaches overlap: but they tend to answer slightly different questions and can require different assumptions.
- For example, the budget needs approach often underlies state support of children (benefits etc.).
- The expenditure approach can be important for dealing with post-separation child support questions or also for some state intervention questions
- The compensation approach is more relevant for the creation of indices of inequality or for various poverty measures.

and the result....?

- Over the last 20 or more years, serious problems have been found with all approaches. The whole equivalence scale literature is full of difficulties and a single clear framework for thinking about these things has not really emerged....
- There is some agreement on the following:
- Budget Share for food increases with additional children. Engel theory.
- Costs of children increase with age
- Marginal expenditure on children decrease as number of children increase (two children do not cost twice as much as one).

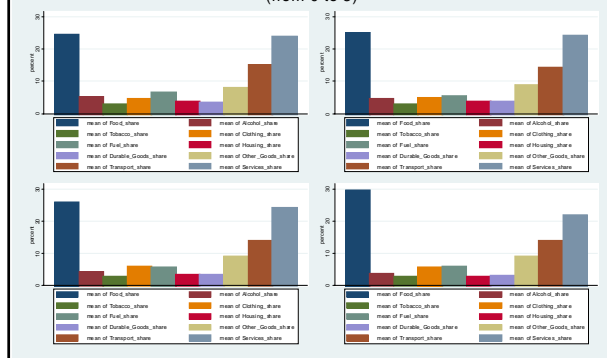
Our work: Data

- We use data from the Household Budget Surveys of 1994 and 1999 (we recently received the 1987 data, and the 2004 data will be available in July).
- About 15500 households, 700-900 HBS "goods", plus information on many household characteristics as well as information on about 130 prices (from the CSO).
- Median (nominal) expenditure p/c: 10,607 and 20,974 in 1994 and 1999 respectively (using Irish equivalence scales).

Visually describing expenditures in different kinds of households:

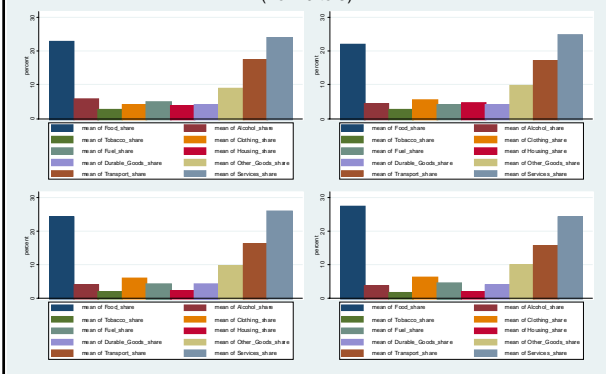
1994

Expenditure Shares by Number of Children (from 0 to 3)

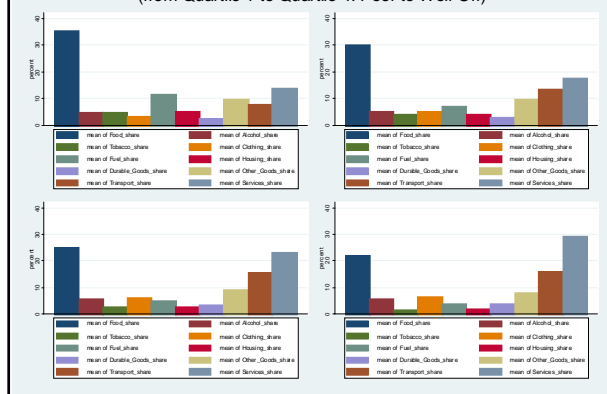


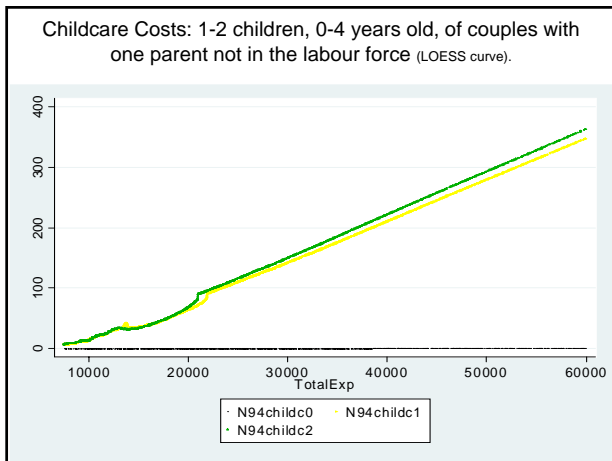
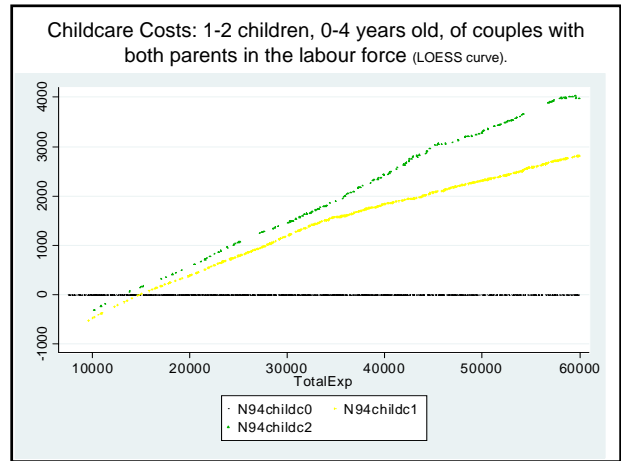
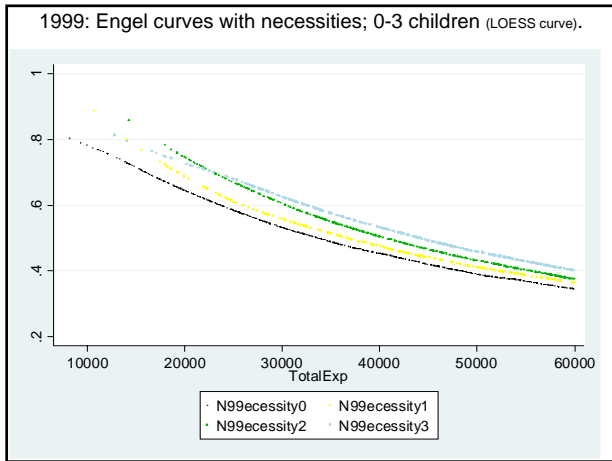
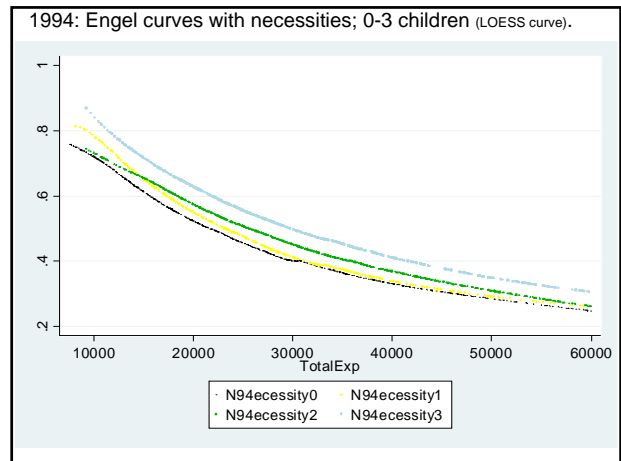
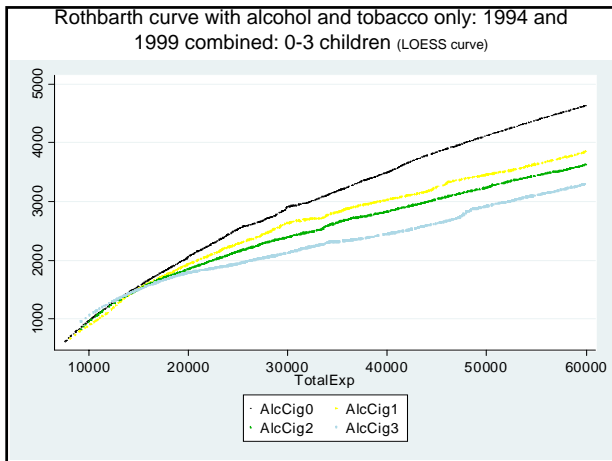
1999

Expenditure Shares by Number of Children (from 0 to 3)



Expenditure Shares by Income Quintile (from Quartile 1 to Quartile 4: Poor to Well-Off)





Some tables (caution....no standard errors reported)

Household Equivalent Scales

Engel Scale	Comparison household	Household Expenditure Level		
		25th percentile	median household	75th percentile
1 adult, 1 child (0-4)	Single person=1	1.234	1.265	1.292
1 adult, 1 child (5-13)	Single person=1	1.541	1.513	1.489
1 adult, 1 "child" (14-20)	Single person=1	1.531	1.504	1.480
2 adults, 1 child (0-4)	Childless Couple=1	1.148	1.177	1.202
2 adults, 1 child (5-13)	Childless Couple=1	1.380	1.355	1.333
2 adults, 1 "child" (14-20)	Childless Couple=1	1.445	1.419	1.397
Rothbarth Scale				
1 adult, 1 child (0-4)	Single person=1	1.300	1.296	1.303
1 adult, 1 child (5-13)	Single person=1	1.380	1.351	1.335
2 adults, 1 child (0-4)	Childless Couple=1	1.161	1.163	1.160
2 adults, 1 child (5-13)	Childless Couple=1	1.233	1.218	1.217

2 and 3 children:

Household Equivalent Scales

Engel Scale	Comparison household	25th percentile	median household	75th percentile
1 adult, 2 children (0-4)	Single person=1	1.497	1.574	1.642
1 adult, 2 children (5-13)	Single person=1	2.275	2.192	2.124
1 adult, 2 "children" (14-20)	Single person=1	2.202	2.123	2.058
2 adults, 2 children (0-4)	Childless Couple=1	1.295	1.361	1.421
2 adults, 2 children (5-13)	Childless Couple=1	1.823	1.757	1.703
2 adults, 2 "children" (14-20)	Childless Couple=1	1.962	1.892	1.834

Rothbarth Scale

1 adult, 2 children (0-4)	Single person=1	1.601	1.598	1.621
1 adult, 2 children (5-13)	Single person=1	1.900	1.804	1.754
2 adults, 2 children (0-4)	Childless Couple=1	1.255	1.263	1.281
2 adults, 2 children (5-13)	Childless Couple=1	1.452	1.416	1.401

Engel Scale	Comparison household	25th percentile	median household	75th percentile
1 adult, 3 children (0-4)	Single person=1	1.787	1.925	2.053
1 adult, 3 children (5-13)	Single person=1	3.215	3.042	2.902
1 adult, 3 "children" (14-20)	Single person=1	2.974	2.816	2.687
2 adults, 3 children (0-4)	Childless Couple=1	1.438	1.550	1.652
2 adults, 3 children (5-13)	Childless Couple=1	2.307	2.183	2.082
2 adults, 3 "children" (14-20)	Childless Couple=1	2.502	2.369	2.260

Rothbarth Scale

1 adult, 3 children (0-4)	Single person=1	1.764	1.778	1.828
1 adult, 3 children (5-13)	Single person=1	2.467	2.261	2.154
2 adults, 3 children (0-4)	Childless Couple=1	1.240	1.259	1.287
2 adults, 3 children (5-13)	Childless Couple=1	1.582	1.527	1.502

Gender and Urban/Rural Differences

Household Equivalent Scales: Girls and Boys

Engel Scale	Comparison household	25th percentile	median household	75th percentile
1 adult, 1 girl(0-4)	Single person=1	1.193	1.227	1.258
1 adult, 1 girl(5-13)	Single person=1	1.403	1.408	1.411
1 adult, 1 "girl" (14-20)	Single person=1	1.423	1.411	1.400
2 adults, 1 girl(0-4)	Childless Couple=1	1.101	1.133	1.161
2 adults, 1 girl(5-13)	Childless Couple=1	1.263	1.267	1.271
2 adults, 1 "girl" (14-20)	Childless Couple=1	1.370	1.358	1.347
1 adult, 1 boy(0-4)	Single person=1	1.269	1.293	1.314
1 adult, 1 boy(5-13)	Single person=1	1.698	1.629	1.573
1 adult, 1 "boy" (14-20)	Single person=1	1.509	1.479	1.453
2 adults, 1 boy(0-4)	Childless Couple=1	1.206	1.229	1.248
2 adults, 1 boy(5-13)	Childless Couple=1	1.472	1.413	1.364
2 adults, 1 "boy" (14-20)	Childless Couple=1	1.450	1.420	1.396

Rothbarth Scale

1 adult, 1 girl(0-4)	Single person=1	1.222	1.210	1.210
1 adult, 1 girl(5-13)	Single person=1	1.288	1.281	1.282
2 adults, 1 girl(0-4)	Childless Couple=1	1.121	1.115	1.114
2 adults, 1 girl(5-13)	Childless Couple=1	1.172	1.170	1.174
1 adult, 1 boy(0-4)	Single person=1	1.289	1.299	1.318
1 adult, 1 boy(5-13)	Single person=1	1.406	1.362	1.332
2 adults, 1 boy(0-4)	Childless Couple=1	1.149	1.159	1.175
2 adults, 1 boy(5-13)	Childless Couple=1	1.238	1.214	1.199

Household Equivalent Scales: Urban and Rural

Engel Scale	Comparison household	Urban household	median household	Rural
1 adult, 1 child (0-4)	Single person=1	1.320	1.320	1.239
1 adult, 1 child (5-13)	Single person=1	1.575	1.575	1.601
1 adult, 1 "child" (14-20)	Single person=1	1.429	1.429	1.417
2 adults, 1 child (0-4)	Childless Couple=1	1.244	1.244	1.169
2 adults, 1 child (5-13)	Childless Couple=1	1.396	1.396	1.420
2 adults, 1 "child" (14-20)	Childless Couple=1	1.380	1.380	1.368

Percentage of children at risk of poverty (using 6 different equivalent scales)

	Income Measure		Expenditure Measure	
	% of children in households with p/c disposable income less than 60% of median		% of children in households with p/c expenditure less than 60% of median	
	1994	1999	1994	1999
OECD scales	26.6	24.2	23.9	21.9
OECD modified scales	20.0	19.0	18.4	18.4
Irish scales	19.8	19.7	18.5	18.7
UK scales	23.6	21.8	21.3	20.2
Engel scales	18.5	18.1	17.9	17.1
Rothbarth scales	11.7	13.5	12.4	12.6

Inequality Indices: using Engel scale

Gini Coefficients using Income, Expenditure and 6 scales

	Income	
	1994	1999
OECD scales	0.318	0.325
OECD modified scales	0.313	0.323
Irish scales	0.313	0.321
UK scales	0.314	0.323
Engel scales	0.310	0.319
Rothbarth scales	0.308	0.318
	Expenditure	
	1994	1999
OECD scales	0.320	0.320
OECD modified scales	0.319	0.320
Irish scales	0.316	0.318
UK scales	0.319	0.319
Engel scales	0.319	0.319
Rothbarth scales	0.324	0.324

Demand System: main results

Percentage change in consumption shares from an extra child

	under 5	5-13 year old
Food	0.424	2.23
Alcohol	-0.68	-0.691
Cigs	0.186	-0.0353
Clothing	0.0436	0.254
Fuel	0.254	0.166
Housing	-0.422	-0.39
Personal Goods	-0.123	-0.151
Services	0.3174	-1.3827

Summary of cost results

- Older children cost more (schoolgoing kids cost between 40% and 100% more than toddlers/infants; depending on Rothbarth or Engel scale).
- 14-20 year olds cost a roughly similar amount to 5-13 year olds.
- Greater returns to scale for toddlers/ infants. Constant or maybe decreasing returns for older children.
- Infants cost more in the city; older children cost more in rural areas. Boys cost more than girls.
- Child poverty increased from 1994-1999 using the Rothbarth scale income measure. It decreased using other scales and was pretty stable using expenditure instead of income. (Important to note large increase in nominal expenditure between 1994 and 1999).
- Income inequality > Expenditure inequality in 1994; vice versa in 1999.

Addendum: Standard Economics View....

1. Welfare depends on the degree to which preferences are satisfied.
 2. People rationally choose to satisfy their preferences (altruistic or otherwise).
- In this framework, given a few (fairly strong!) assumptions, the free market is shown to maximize welfare.
 - This framework helps engender a non-interventionist "free-market" stance among many economists.

Economic (i.e. Efficiency) Justifications for Government Intervention

- The only reason for state intervention generally accepted by most mainstream economists (as economists) is "market failure".
- Market failures happen generally because of lack of clear ownership rights or because of lack of information.
- Solutions include..... government provision, statutory regulation, changing incentives via taxes/subsidies, the creation of "artificial" markets.
- There are clear capital-market market-failures (and others) regarding children. Hence intervention is economically justifiable.

Children

- In the standard view, the main market failure regarding children is in the capital markets
- Because of lack of information, children cannot borrow against their own future income (and even if they could, there would be still be agency problems.....).
- Costs that the child would willingly pay (as an ideal version of their future selves, as it were) may not get paid now.
- Therefore, it can be efficient for the state to intervene.....through state provision / regulation / subsidy etc.