EC317 Labour Economics Problem Set 3

1. Cathy lives in Ealing and works for 8 hours per day at a department store in central London. Her hourly wage is \$12. Her income allows her to live comfortably and Cathy is quite pleased with her situation. Given the circumstances, she wouldn't change a thing. Then her son Ben is born. After staying home with the baby during the first few months, Cathy returns to her job at the old wage. It hasn't been easy to find a babysitter. Fortunately, she found Carla, whom she trusts and who takes care of Ben for \$6 an hour while Cathy works. The only drawback is that Carla lives in Brentford so that Cathy has to spent an extra half hour every morning to drop off Ben and the same when she picks him up at night. Assume leisure and consumption are both normal goods for Cathy. Use the labor-leisure choice diagram to answer the following questions (neglect that Cathy's preferences for consumption might have changed due to the birth of the baby):

- (a) Is Cathy still happy with her 8 hour job or would she like to increase or decrease her hours?
- (b) If leisure was borderline inferior for Cathy, i.e. she would spend all of on an extra dollar on consumption, would your qualitative answer to a) change?
- (c) Assume that Cathy has found an arrangement with her employer that she likes, so given her childcare setup she wouldn't want to change her hours. Also assume both leisure and consumption are normal goods again. One day, Carla suggests that she could come to Ealing in the mornings and evenings and pick up and return Ben herself. She would charge an additional \$6 for the driving every day. Will Cathy agree to this new arrangement if she can choose her workhours freely?
- (d) Which charge for the driving of Ben would make Cathy just indifferent between Carla picking him up and she dropping him off herself?

2. The following table reports results from three regression models estimated by Reuben Gronau. The regressions were estimated for a sample of 660 employed women, and seek to determine how these women allocate their time to the three activities: market work, work at home, and leisure. Gronau estimates models of the form

$$h_i = a + bw_i + cy_i + dx_i$$

where h_i is hours per year spent in an activity by woman *i*, w_i is the natural logarithm of her expected market wage, y_i is her unearned income, and x_i denotes other characteristics like age, education, and husband's wage. The table reports the coefficients *a*, *b*, *c*, and *d*, as well as their tratios (in parentheses). A t-ratio below 2 means that given the sample size, the coefficient is not really distinguishable from zero.

	Work in the Market	Work at Home	Leisure
Constant	-9310.70	3213.34	14857.36
	(9.14)	(3.30)	(12.61)
Wife's Age	-14.97	4.08	10.88
	(5.08)	(1.45)	(3.19)
Wife's Education	-241.31	11.88	229.43
	(8.47)	(0.44)	(6.97)
Husband's Eduction	-31.03	14.00	17.03
	(2.30)	(1.09)	(1.09)
$\mathbf{I}_{\mathbf{v}} = \mathbf{I}_{\mathbf{v}} + \mathbf{I}_{\mathbf{v}} = $	-151.90	15.26	136.63
Husband's Wage (\$/nour)	(8.89)	(0.93)	(6.91)
Unearned Income ($10/year$)	-0.60	0.20	0.40
	(2.21)	(0.76)	(1.28)
Children Age 0-17	-189.56	276.03	-86.47
	(4.81)	(7.31)	(1.90)
Children at School	98.39	-100.10	1.70
	(2.64)	(2.81)	(0.04)
Rooms	-3.50	29.15	-25.65
	(0.16)	(1.37)	(1.00)
Wife's Expected Wage (log)	2810.95	-514.77	-2296.18
	(11.11)	(2.13)	(7.85)

- (a) Interpret the coefficients on unearned income and the woman's expected wage in each equation.
- (b) Using the Slutsky equation for the basic labor supply model, calculate the compensated labor supply elasticitity for a woman working 2000 hours at a wage \$10? Is the elasticity postive?
- (c) Are the signs of the estimated coefficients consistent with the household production model discussed in class? What does the model imply for the signs of the coefficients Gronau estimates? What do we learn from Gronau's results about important female labor supply elasticities?