

# Determining the Value of Lost Household Production

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# Why Important?

- Lost Household Production Value can be a significant part of compensatory economic damages
- If done improperly, it opens the door to challenging the expert's testimony via tough cross-examination questions

# Uses in Litigation

- In assessing economic damages in some types of cases
  - In Personal Injury (PI) cases where limits due injury prevent some or all non-market work
  - In Wrongful Death (WD) cases where deceased individual provided some non-market work

# Valuation Perspective

Key: Productive use of time may arise in both labor market and non-market settings

- In labor market, individual exchanges skilled services for a “rent” called compensation
- In non-market setting, we can divide time into leisure and non-market work
- Non-market (or household production) work are activities you would be willing to pay someone else to do for you

# Six Conceptual Challenges to Determining HH Production Value

1. Choice of method for measurement
  - a. Replacement cost
  - b. Market approach
  - c. Fixed amount
2. What activities to include: how much time?
3. How to value non-market activities?
4. How to update values?
5. Determining length of loss period
6. Making adjustments for self-consumption

# Defining terms/approaches

- Replacement cost: sometimes called a specialist-cost method, is cost of hiring individuals to do each activity performed in HH work
  - E.G. food shopping, lawn care cost, paying someone to clean house, etc.
- Market or Opportunity cost: approach values HH work by foregone market wage of person injured or deceased
  - EG. If person made \$100/hr in market and it takes an hour to cut the grass, the cost is \$100 excluding capital, gas, etc.
- Housekeeper: HH work valued at cost of hiring a housekeeper to do all activities

# Methods used by forensic economists

- 2003 survey of forensic economists found following methods used to assess the dollar value of lost household services\*
  - Cost to replace activities lost 54.0%
  - Market or opportunity wage 4.0%
  - Housekeeper wage 10.4%
  - Minimum wage 6.2%
  - Combination or other 25.3%

\*Source: M. Brookshire, et.al. “Forensic Economists, Their Methods” Litigation Economics Review, Summer 2004.

# Choice of an approach

- In “Which Estimates of Household Production are Best?” Journal of Forensic Economics, Winter, 1990, the authors conclude:
  - “...the specialist-cost technique is more accurate than pricing hours with the wage of a housekeeper and less controversial than pricing hours with opportunity wage”, p.28.
- I agree with this observation

# Time-use surveys help ID HH tasks

- Widely-used to identify activities of HH work
- Survey Differences due to
  - where done (national or local),
  - when done,
  - type of HH included (husband-wife, single, presence of children and/or elderly person),
  - employment status of adults

NOTE: INTERVIEWS BY EXPERT: expert may ask plaintiff (or survivors) about HH production activities to add credibility but it's not a good idea to base analysis just on such interviews: time-use surveys are best left to experts

# Which Activities to Include?

- Household Production: housework, food cooking & cleanup, outdoor chores, home & auto maintenance, purchase goods & services "YES"
- Providing Care: child care, child guidance, playing with children, transporting children, providing care to others "MAYBE"
- Personal Care: grooming, sleeping, etc. "NO"
- Employment or Education (includes commuting) "NO"

# Recent Time Evidence on HH Production (for multiple adult household, females with children)\*

- Housework 7.3 (hrs/wk)
- Food Cooking & Cleanup 5.9
- Outdoor Chores 1.2
- Home & Auto Maintenance 0.2
- Purchase Goods & Services 6.7

TOTAL 21.4 (hrs/wk)

\*Source: K. Krueger & J. Ward, Dollar Value of a Day, ExpectancyData, Inc., Shawnee Mission, Kansas, 2001.

# Valuation of HH Activities

To express HH Work Time ( $t$ ) in Dollar Values, we must weight by Wages ( $w$ ) but...Which Wage or Wages?

Choices of Wage-Weights:

- Task-specific market wages\*
- Single wage for all HH time based on housekeeper pay
- Opportunity wage in labor market
- Minimum wage for all HH time
- Combination

\* Used by most forensic economists & considered more accurate than other methods

# 1999 dollar value of a day by females with children employed full-time\*

- Housework hrs/wk \$10.10
- Food Cooking & Cleanup 6.89
- Outdoor Chores 1.83
- Home & Auto Maintenance 0.37
- Purchase Goods & Services 10.58

TOTAL \$29.77\*\*

\*Source: Krueger/Ward, ibid. Authors multiply each separate activity by appropriate wage from OES survey conducted by BLS and States to obtain above figures

\*\*\$29.77/day times 365.24 days/yr is \$10,873 in 1999

# Updating HH Production Value

## Two issues: time and/or price

- Activity updates via use of more recent survey
- If the survey and/or subsequent econometric analysis enables it, expert may adjust HH activities according to:
  - Age of Adult
  - Age & Presence of Children (or other care recipients)
  - Marital & Employment Status of Adult
- Updates to value of HH activities typically use CPI, ECI, or task-specific wages like OES

# Updating HH Value using CPI

- CPI for 1999 was 166.6 vs. 188.9 for 2004\*
- $(188.9 - 166.6) / 166.6 * 100 = 13.385$
- Dollar value of \$29.77/day in 1999 is  $\$29.77 * (1.1385) = \$33.89$  in 2004
- On an annual basis, \$33.89/day is \$12,378 in 2004 dollars
- Next step is to forecast HH production value

\*BLS, Consumer Price Index, US City Average, All items, 1982-84=100, Annual.

# Updating to reflect age of adult

- In Douglass, et.al., citing Peskin study, age effects on annual HH Production Value in 1987 for employed women are:

– Age	35-39	\$8,619
– Age	40-44	\$8,323
– Age	45-49	\$7,725 (same for 50-54)
– Age	55-59	\$7,717 (same for 60-64)
If not employed, Age	65-69	\$12,605
	Age 70-74	\$8,975
	Age 75-79	\$6,103

KEY POINTS: employment effect is significant (if not employed age 35-39 then HH value is \$13,486), children if present raises HH value, age effect lowers HH production value

# Length of Loss Period

- A standard issue in damages assessments
- Loss Period Length is typically from date of PI or WD for entire life expectancy
  - some challenge this view and deduct last 10 years entirely or via a straight-line deduction for last few years of expected life
- 2003 study by ExpectancyData, Inc. computes expected “Years of Healthy Life” and “Full Function Life” as alternative lifetime HH productive capacity
  - E.g. a 50 yr old white male has 28.43 yrs of life expectancy, 21.87 yrs of healthy life expected, and 25.31 yrs of full function life expected

# Self-consumption Allowance

- In computing damages in a WD case, common practice is to deduct self-consumption from market earnings since that is not a net loss to survivors
- A logical extension is to do same for HH value
- Deduction varies by family size, number of children, & data used
  - For example, in Determining Economic Damages, 7/04, G. Martin summarizes 15 studies to show self-consumption is 31.0% for each parent if no children, 20.1% if two children, etc.

# Other issues (conundrums)

- Joint Production vs. Single Activities
  - How to count time spent doing three things at once like preparing a meal, providing child care & shopping on-line???
- Joint Family vs. Individual Service Value
  - What about situation in which wife dies and husband no longer needs to pick up her dry cleaning or wash her dishes? Should expert also estimate loss in his HH production value???

# Recommendations

- Check with client/attorney
  - Does HH production valuation fit facts of case & venue
- Select and be prepared to defend
  - What HH activities: time-use study or published HH production report. I prefer those showing age, employment, and child effects
  - Which Valuation Method: I prefer replacement cost
  - Update Method: Update valuation if past study & forecast if future losses. I prefer updating/forecast via ECI (services) or CPI (HH operations)
  - Make self-consumption deduction: done in WD cases
- Be reasonable & conservative & acknowledge limitations of analysis if asked

# Conclusions

- Relevance: HH Production Valuation may be part of some PI and WD litigation
- Methods: Key issues involve identification & valuation & value update of HH activities
- Intended Uses this session: To help you sharpen your assessments of HH production value and/or enable you to challenge opposing expert's analysis