

# Consumption of Household Production

*Benjamin Bridgman*

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- Household production (HP) economically important source of aggregate consumption.
  - HP: Non-market production of activities that could be purchased.
  - BEA estimates HP would increase GDP by 23 percent in 2017.
- HP might be particularly important in comparing household level consumption.
  - Example: Stay-at-home parent vs. market daycare
  - Marketization (buying rather than making HP type services) linked to income.
- How would we integrate HP estimates into a U.S. consumption distributional account?
  - Document what resources we already have.
  - Catalog what remains to be done.

- BEA periodically publishes HP Satellite Accounts.
  - *Review of Income & Wealth* 2000, 2009; *Survey of Current Business* May 2012, Feb. 2016, June 2019.
- Methodology: Income approach.
  - Assume marginal return to market, non-market activity equalized (Bridgman 2015).
  - Consistent with international standards (UNECE 2018).
- Covered activities:
  - Cooking, Housework, Odd Jobs, Gardening, Shopping, Child Care, Travel in Support of Household Production.

- Impute factor payments to HP hours/capital (consumer durables):
  - Aggregate hours from American Time Use Survey (ATUS):  $L$
  - Aggregate consumer durable stocks from BEA's fixed asset tables:  $K$
  - Wage of household workers:  $w$
  - Rate of return of household financial assets:  $r$

$$p_{HP}HP = wL + rK$$

- HP value of home cooked meal:
  - Value of cooking time + capital cost of appliances

- BEA estimates on income basis, consumption on product basis.
- Household consumption (HC) sum of HP and materials used  $M$ .

$$p_{HC}HC = wL + rK + p_M M$$

- Value of home cooked meal:
  - Value of cooking time + capital cost of appliances + cost of ingredients.
- Materials already included in Personal Consumption Expenditures (PCE).
  - In example, cost of ingredients are counted in non-durable consumption: “Food for off-premises consumption.”
- To get increase in nominal total consumption, you only need to estimate HP.
  - Real, product level consumption requires more prices, allocating  $K$ ,  $M$  to a product.

- BEA estimates *aggregate* HP.
- Need to allocate estimates to (groups of) households to get a distributional account.
  - 2012 HP Satellite Account release distributes HP by *income* (SCB May 2012).
- Source data challenges:
  - ATUS distinct survey from CE.
  - No household level data on **value** of consumer durables **stocks**.
- Overcoming data challenges:
  - Links, pseudo-links between surveys (e.g. link ATUS/CE on income, done by Feng, Hannusch & Silos 2020).
  - Impute durable value using information on purchases/ownership indicators (e.g. CE asks about presence of car).

- HP important at the aggregate level, potentially important at household level.
- Theory for estimating disaggregated HC well developed.
- Some data gaps to be bridged to include HP in a consumption distributional account.