Goal of Public Finance

- Study the interaction between the government and the economy
- Strong normative component
  - Should we increase taxes?
  - Should we spend more on education, roads, etc.?
  - Should we change the mix of taxes (e.g. commodity vs. property vs. capital vs. income taxes)?
- Requires notion of “should”
  - Use economics to formalize notions of welfare
  - Question: How would you define “Welfare”?
Key idea of economics: Build “Welfare” from individual’s willingness to pay
- Consumer surplus (Marshall 1890)
- Compensating variation and Equivalent variation (Hicks 1939, 1940, 1941; Kaldor 1939)

Recent literature on “Sufficient statistics”
- Shows how local elasticities map into welfare analysis of small policy changes
- Provides “first order” link between theory and empirics
  - But, envelope theorem is useful for analyzing small welfare changes
Many definitions of welfare:
- Marginal excess burden (Harberger 1964, Feldstein 1999, Kleven and Kreiner 2005)
- Marginal Cost of Funds (Stiglitz and Dasgupta 1970, Atkinson and Stern 1971)

Set up a general economic model to define these concepts
- Will argue MWTP is particularly useful from an empirical perspective because it uses causal effects of the policy in question
Suppose you have a policy in mind

- e.g. TPP, electric car subsidies, job training...

What do you need to estimate to know the impact of the policy on social welfare?
This Lecture

- This lecture illustrates how to move from positive analysis to normative analysis
  - You’ve estimated a causal effect and now you want to say something about “welfare”
- **Key lessons:** To first order, three types of parameters are fundamental for welfare:
  1. Individuals’ willingness to pay (out of their own income) for the policy change
  2. Impact of behavioral responses on externalities
     - Key externality: Fiscal externality of behavioral response on gov’t revenue
  3. Social marginal utilities of income (Saez and Stantcheva, 2016)
- **Things one does not need to know:**
  - Behavioral responses that don’t induce externalities
  - Decompositions of behavioral responses (income vs. substitution effects)
Welfare is about benefits versus costs

Given a policy, \( P \),
- We need to define its marginal benefit, \( Benefit^P \)
- And its marginal cost to the government, \( Cost^P \)

And we construct the benefit per unit cost:

\[
MVPF^P = \frac{Benefit^P}{Cost^P}
\]

Spending more gov’t dollars on a policy with a higher (lower) MVPF increases (decreases) welfare
1 Theory

2 Empirics
Setup

  - Similar results (different notation) in Slemrod and Yitzhaki (2001) and Kleven and Kreiner (2006)
- Unit mass of individuals, indexed by $i$
- Individual $i$ chooses:
  - Goods $x_i$ and labor supply $l_i$
    - Could be vectors of goods/labor supply activities
- Government chooses:
  - Publicly provided goods and services, $G$, at marginal cost $c$
  - Taxes on goods and labor supply: $\tau^x_i$ and $\tau^l_i$
  - Transfers $T_i$
  - Non-linear taxes?
Utility function

- Individuals have utility function

\[ u_i (x, l, G) \]

- Production: Goods are produced linearly with one unit of labor supply

\[ (1 + \tau_i^x) x_i \leq (1 - \tau_i^l) l_i + T_i \]

- What have we ruled out?
  - Spillovers/GE effects (individual i’s choice of \( l_i \) doesn’t affect individual j’s wage)
  - Profits?
  - Single budget constraint (Dynamics? Uncertainty?)
Indirect utility function

\[ V_i \left( \tau_i^x, \tau_i^l, G_i \right) = \max_{x_i, l_i} u_i \left( x_i, l_i, G_i \right) \]

s.t.

\[ \left( 1 + \tau_i^x \right) x_i \leq \left( 1 - \tau_i^l \right) l_i + T_i \]

Lagrange multiplier \( \lambda_i \) is marginal utility of income
Social Welfare

- Social welfare function
  \[ W \left( \{ \tau_i^x, \tau_i^l, G \}_i \right) = \sum_i \psi_i V_i \left( \tau_i^x, \tau_i^l, G_i \right) \]

- Bergson (1938)-Samuelson (1947)
- Does \( \psi_i \) depend on things other than utility? (Saez and Stantcheva 2013)
- Does it matter that we assume weights are linear?
  - Not for small policy changes (\( \psi_i \) is the derivative of the SWF w.r.t. person \( i \)’s utility)
Policy Changes

- Define a “Policy Path” to trace out changes to government policy, $P(\theta)$:

- For any $\theta \in (-\epsilon, \epsilon)$

  \[ P(\theta) = \left\{ \left\{ \hat{\tau}_{ij}(\theta) \right\}_j, \left\{ \hat{\tau}_{ij}^x(\theta) \right\}_j, \hat{T}_i(\theta), \hat{G}_i(\theta) \right\}_i, \]

- Two assumptions (Draw Picture):
  1. $\theta = 0$ is status quo:
     \[ \left\{ \left\{ \hat{\tau}_{ij}(0) \right\}_j, \left\{ \hat{\tau}_{ij}^x(0) \right\}_j, \hat{T}_i(0), \hat{G}(0) \right\}_i = \left\{ \left\{ \tau_{ij} \right\}_j, \left\{ \tau_{ij}^x \right\}_j, T_i, G_i \right\}_i \]
  2. $P(\theta)$ is continuously differentiable in $\theta$

- Should the government follow the policy path and increase $\theta$?
  - Need to measure how welfare changes with $\theta$
  - First, start with the positive questions...
Positive Analysis: Agent’s Behavior and Government Budget

- Agents optimally choose $x_i$ and $l_i$ facing policy $P(\theta)$
  \[ \hat{x}_i(\theta) = \{ \hat{x}_{ij}(\theta) \}_j \quad \text{and} \quad \hat{l}_i(\theta) = \{ \hat{l}_{ij}(\theta) \}_j \]
  - These are “potential outcomes” in world $P(\theta)$
  - Canonical definitions of causal effects

- Net government resources towards individual $i$,
  \[ \hat{t}_i(\theta) = c \hat{G}_i(\theta) + \hat{T}_i(\theta) - \sum_{j=1}^{J_X} \hat{\tau}_{xij}(\theta) \hat{x}_{ij}(\theta) - \sum_{j=1}^{J_L} \hat{\tau}_{lij}(\theta) \hat{l}_{ij}(\theta) \]

- Budget neutrality would be $\sum_i \frac{d\hat{t}_i}{d\theta} = 0 \quad \forall \theta$
  - $\frac{d\hat{t}_i}{d\theta}$ captures distributional impact
  - Behavioral response affects budget

\[ \frac{d}{d\theta} \left( \sum_{j=1}^{J_X} \hat{\tau}_{xij}(\theta) \hat{x}_{ij}(\theta) + \sum_{j=1}^{J_L} \hat{\tau}_{lij}(\theta) \hat{l}_{ij}(\theta) \right) = \left( \sum_{j=1}^{J_X} \frac{d\hat{\tau}_{xij}}{d\theta} \hat{x}_{ij}(\theta) + \sum_{j=1}^{J_L} \frac{d\hat{\tau}_{lij}}{d\theta} \hat{l}_{ij}(\theta) \right) = \left( \sum_{j=1}^{J_X} \tau_{xij} \frac{d\hat{x}_{ij}}{d\theta} + \sum_{j=1}^{J_L} \tau_{lij} \frac{d\hat{l}_{ij}}{d\theta} \right) \]

- Mechanical Impact on Govt Revenue
- Behavioral Impact on Govt Revenue
Normative Analysis: Marginal Willingness to Pay for Policy

- Normative questions:
  - WTP: How much are people willing to pay to move along the policy path?
  - Person $i$’s marginal willingness to pay to move along the policy path

\[
\frac{d\hat{V}_i}{d\theta} \bigg|_{\theta=0} \lambda_i
\]

- Money metric utility measure
- Equivalent to marginal EV and marginal CV
  - Why?
Characterization of Marginal Willingness to Pay for Policy

- The envelope theorem (Draw Picture) implies:

\[
\frac{d\hat{V}_i}{d\theta} \bigg|_{\theta=0} = \frac{\partial u_i}{\partial G_i} \frac{d\hat{G}_i}{d\theta} + \frac{dT_i}{d\theta} - \sum_j J_x \frac{d\hat{\tau}_{ij}^x}{d\theta} x_{ij} - \sum_j J_l \frac{d\hat{\tau}_{ij}^l}{d\theta} l_{ij}
\]

- Behavioral responses don’t affect utility directly

- Does this mean we don’t need to estimate behavioral responses?

- What about discrete choices? (e.g. extensive margin labor supply?)
Characterization of MWTP

- Behavioral responses matter in keeping track of net resources
- Now, substitute:

\[
\frac{d \hat{T}_i}{d\theta} = \frac{d \hat{t}_i}{d\theta} - c \frac{d \hat{G}_i}{d\theta} + \frac{d}{d\theta} \left( \sum_{j=1}^{J_X} \hat{\tau}_{ij}(\theta) \hat{x}_{ij}(\theta) + \sum_{j=1}^{J_L} \hat{\tau}_{ij}(\theta) \hat{l}_{ij}(\theta) \right)
\]

- This yields:

\[
\frac{d \hat{V}_i}{d\theta} \bigg|_{\theta=0} = \frac{d \hat{t}_i}{d\theta} + \left( \frac{\partial u_i}{\partial \hat{G}_i} \frac{\lambda_i}{\hat{\tau}_{ij}} - c \right) \frac{d \hat{G}_i}{d\theta} + \left( \sum_{j} \hat{\tau}_{ij} \frac{d \hat{x}_{ij}}{d\theta} + \sum_{j} \hat{\tau}_{ij} \frac{d \hat{l}_{ij}}{d\theta} \right)
\]

where the RHS is evaluated at \( \theta = 0 \).
- Behavioral responses matter to the extent to which individuals impose resource costs for which they don’t pay
- If government taxation is only wedge between social and private costs, a single causal effect is sufficient
- Impact on government revenue is sufficient for all behavioral responses
Budget-Neutral Policies

- If policy is budget neutral towards individual $i$, then
  
  $$\frac{d\hat{V}_i}{d\theta} \bigg|_{\theta=0} = \frac{\partial u_i}{\partial G_i} \frac{d\hat{G}_i}{d\theta} + \left( \sum_j \tau_{ij} \frac{d\hat{x}_{ij}}{d\theta} + \sum_j \tau_{ij} \frac{d\hat{l}_{ij}}{d\theta} \right)$$

  where the RHS is evaluated at $\theta = 0$.

  - Behavioral responses matter to the extent to which individuals impose resource costs for which they don’t pay

  - If government taxation is only wedge between social and private costs, a single causal effect is sufficient
    - Impact on government revenue is sufficient for all behavioral responses
Suppose $P_1(\theta)$ and $P_2(\theta)$ are two non-budget neutral policies

- Marginal cost to govt of $\int_i \frac{d\hat{t}_i^{P_1}}{d\theta} di$ and $\int_i \frac{d\hat{t}_i^{P_2}}{d\theta} di$

- Marginal social welfare of $\int_i \eta_i \frac{d\hat{\nu}_i^{P_1}}{d\theta} |_{\theta=0} di$ and $\int_i \eta_i \frac{d\hat{\nu}_i^{P_2}}{d\theta} |_{\theta=0} di$


Benefit-cost ratio for each policy

$$MVPF^\hat{P} = \frac{\int_i \eta_i \frac{d\hat{\nu}_i^P}{d\theta} |_{\theta=0} di}{\int_i \frac{d\hat{t}_i^P}{d\theta} di} = \frac{"BENEFIT"}{"COST"}$$

- measured in units of $\hat{i}$ income
Simplified Formulas for the MVPF

- Make two simplifications helpful in empirical implementation
  - Simplification #1: Assume beneficiaries have same $\eta_i$
    - Compute MVPF in units of beneficiaries’ income
  - Simplification #2: Suppose policy either effects market or non-market transfers
Simplified Formulas for the MVPF

- Two formulas:
  - [Market Goods/Transfers] \( P(\theta) \) increases mechanical transfers/subsidies by $\theta$
    
    \[
    MVPF = \frac{\text{Benefit}}{\text{Cost}} = \frac{1}{1 + FE}
    \]
    
    \( 1 + FE = \frac{1}{|I|} \int_{i \in I} di \left( \frac{dP_i}{d\theta} \right) \) is cost of providing $1$ mechanical income
    (which differs from $1$ because of fiscal externalities)
  - [Non-Market Goods] \( P(\theta) \) increases public goods/services, \( G \), by $\theta$
    
    \[
    MVPF = \frac{\text{Benefit}}{\text{Cost}} = \frac{\frac{\partial u}{\partial G}}{\lambda} \frac{1}{1 + FE}
    \]
    
    Multiply by WTP for \( G \) relative to income, \( \frac{\partial u}{\partial G} \)
  - What if \( G \) is spending on a tax cut? Then, you can show \( \frac{\partial u}{\partial G} = 1 \), so the formula reduces to \( \frac{1}{1 + FE} \).
Comparisons of MVPF correspond to comparisons of social welfare

If beneficiaries of $P_1$ and $P_2$ are the same, welfare impact of budget-neutral policy with more $P_2$ and less $P_1$

$$MVPF_{P_2} - MVPF_{P_1}$$

Government spending on policies with high MVPF financed from low MVPF policies increases social welfare
  - But need beneficiaries are the same
Comparisons Using Okun’s Bucket

- What if beneficiaries of $P_1$ and $P_2$ differ?

  - Suppose $\eta_i$ is constant within the set of beneficiaries
    - Beneficiaries of $P_1$ have equal social marginal utility of income $\eta_1$
      - $MVPF_{P_1}^1$ is marginal benefit to beneficiaries, normalized by govt cost
    - Beneficiaries of $P_2$ have equal social marginal utility of income $\eta_2$
      - $MVPF_{P_2}^2$ is marginal benefit to beneficiaries, normalized by govt cost

- Increasing spending on $P_1$ and decrease spending on $P_2$ increases welfare iff

  \[
  \frac{\eta_1}{\eta_2} \geq \frac{MVPF_{P_2}^2}{MVPF_{P_1}^1}
  \]

  where $\eta_i = \frac{\psi_i}{\lambda_i}$ is the social marginal utility of income

- Okun (1980)

  “Society can transport money from rich to poor only in a leaky bucket”
Aside: Marginal Excess Burden (MEB)

- MVPF not the only definition
- Alternative definition of welfare: Marginal Excess Burden
  - How much additional revenue could the government get if the policy change is implemented but utility is held constant using individual specific lump-sum transfers
    - Can define MEB/MDWL in this framework
  - Let $v$ denote a vector of pre-specified utilities (e.g. status quo $\leftarrow$ “equivalent variation” MEB in Auerbach and Hines 2002)
    - Define an augmented policy path:

$$P^v = \left\{ \left\{ \hat{t}_{ij}^l (\theta) \right\}_j, \left\{ \hat{t}_{ij}^\pi (\theta) \right\}_j, \hat{T}_i (\theta) + \hat{C}_i (\theta; v), \hat{G}(\theta) \right\}_i$$

where $\hat{C}_i (\theta; v)$ holds utilities constant at $v$. 
Aside: Marginal Excess Burden (MEB)

- MEB is defined as
  \[ MEB_i^{\nu_i} = \frac{d\hat{t}_i^{\nu}}{d\theta} \bigg|_{\theta=0} \]

- Measures additional revenue government could obtain if it implements the policy but then holds people’s utility constant using individual-specific lump-sum transfers
  - Depends on compensated elasticities (why?)
  - But does not correspond to measures of welfare for actual policies
  - Nor can it be estimated using causal effects of actual policies (that generally change utility)

- Therefore, proceed by focusing on MVPF
  - Which depends on WTP and causal effect of policy in question
Summary

Key empirical quantities of interest for measuring welfare:
- Individual’s willing to pay for the policy expenditures (e.g. $\frac{\partial u}{\partial G}$)
- Fiscal externalities of the policy (causal impact of behavioral response to policy on govt budget)

What don’t we need to know?
- Compensated elasticities…
- Other behavioral responses (what about earnings?)
- What about other externalities?
Aside: Pigouvian Externalities

- A brief aside: Externalities
- Suppose choosing $x$ causes an externality, $E(\bar{x})$, where $\bar{x}$ is the aggregate choice of $x$ in the population.
- To make things simple, assume a single (representative) agent framework, but assume choosing $x$ doesn’t incorporate the effect on $\bar{x}$ (and thus the externality.)
- Utility is given by
  \[ u(x, l, G, E(x)) \]
Aside: Pigouvian Externalities

- Marginal WTP for policy change:

\[
\frac{d\hat{V}}{d\theta} = \frac{d\hat{t}}{d\theta} + \left( \frac{\partial u}{\partial G} - c \right) \frac{dG}{d\theta} + \tau^x \frac{d\hat{x}}{d\theta} + \tau^l \frac{d\hat{l}}{d\theta} + \frac{dE}{d\theta} \frac{\partial u}{\partial E} \lambda
\]

- Value of the policy change incorporates the impact of the externality:

\[
\frac{dE}{d\theta} \quad \frac{\partial u}{\partial E} \lambda
\]

Causal impact on E Value of E

where \( \frac{\partial u}{\partial E} \lambda \) is the MWTP for E and \( \frac{dE}{d\theta} \) is the causal (not compensated) impact on E.
Aside: Relation to Pigouvian Tax

How does this related to Pigouvian taxes?
Assume budget neutrality, no public goods, and no tax on labor

Note that

\[ \frac{dE}{d\theta} = \frac{dx}{d\theta} \frac{dE}{dx} \]

so

\[ \frac{d\hat{V}}{d\theta} = \left( \tau^x + \frac{dE}{dx} \frac{\partial u}{\partial E} \right) \frac{d\hat{x}}{d\theta} \]

Pigouvian tax:

\[ \tau^{PIGOU} = - \frac{dE}{dx} \frac{\partial u}{\partial E} \]

Double dividend? Taxing \( x \) yields a 'cheaper' MCPF because it also deals with externality

Your exercise: Show this is true iff \( \tau^x < \tau^{PIGOU} \). What if \( \tau^x > \tau^{PIGOU} \)?

What about internalities?
Applications

- Top marginal tax rate increase
- EITC Generosity
- Food Stamps
- Job Training
- Section 8 Housing Vouchers
Large literature studying causal impact of top tax rate increases / decreases

- Will skip empirical literature already covered in 2450A
- Saez, Slemrod, and Giertz (2012) provide review
  - Many estimates of causal effect of changes to top income tax rate
- Suggests 25-50% of mechanical revenue lost (lots of disagreement/uncertainty!)
  - Fiscal cost is $0.50-$0.75 for $1 in transfer
- Suggests MVPF of $1.33-$2

$$MVPF = \frac{1}{1 - .25} = 1.33$$

Concerns?
Large literature studying causal impact of EITC expansions (Hotz and Scholz 2003, Chetty et al 2013)

- Will also skip empirical literature on EITC covered in 2450A
  - EITC -> increase in earnings, but leads to greater collection of subsidies
  - Is increase in labor supply induced by EITC “Good”?  

Welfare calculation (see Hendren 2016)

- Intensive + extensive calculations suggest fiscal cost of EITC is ~14% higher because of labor supply impacts
- Fiscal cost is $1.14 for $1 in mechanical EITC benefits
- Suggests MVPF of $0.88

\[
MVPF = \frac{1}{1 + 0.14} = 0.88
\]
Food Stamps

- Food stamps imposes high marginal tax rates on earnings
- Hoynes and Schanzenbach (2012) use variation across counties in introduction of food stamp program (1960-70s)
- Use data from 1968-78 PSID
- Exploit variation in %counties providing food stamps
Food Stamps: Empirical Strategy

- Begin with difference-in-difference comparison
- Compare labor supply over counties across time

\[ \gamma_{ict} = \alpha + \delta FSP_{ct} + \eta_c + \lambda_t + \mu_{st} + \sigma CB60_c * t + \gamma REIS_{ct} + \epsilon_{ict} \]

- $FSP_{ct}$ is indicator for county participating in food stamp program
  - $\delta$ is impact of food stamp participation on $\gamma_{ict}$
  - Controls for:
    - County fixed effects, $\eta_c$
    - Time fixed effects, $\lambda_t$
    - Linear state time trends, $\mu_{st}$
    - 1960 census controls * time trends, $CB60_c * t$
Table 1
Impacts of food stamp introduction on labor supply and family income, by group.

<table>
<thead>
<tr>
<th></th>
<th>All nonelderly households (1)</th>
<th>Nonelderly, head educ $\leq 12$ (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Any food stamps $= 1$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>County FSP implemented</td>
<td>0.037 (0.007)**</td>
<td>0.051 (0.009)**</td>
</tr>
<tr>
<td></td>
<td>0.041 (0.008)**</td>
<td>0.060 (0.010)**</td>
</tr>
<tr>
<td>Number of observations</td>
<td>39,607</td>
<td>30,889</td>
</tr>
</tbody>
</table>

**Note:** P-values in parentheses, **** indicates significance at the 1% level.
Event Study

- Rule of thumb: **Always** show graph for difference-in-difference analysis
- Compare labor supply over counties across time

\[
y_{ict} = \alpha + \sum_{j=-3}^{3} \pi_j 1(\tau_{ct} = j) + \eta_c + \lambda_t + \mu_{st} \\
+ \sigma CB60_c \times t + \gamma REIS_{ct} + \epsilon_{ict}
\]

- \(\tau_{ct}\) is the event-year in which a county \(c\) joins the food stamp program
- Focus on labor hours as \(y_{ict}\)
Results

- What is the ideal LHS variable?
  - Tax Revenue!
  - They don’t look at this...

- Find large but imprecise decrease in labor earnings of $2,943 (can’t reject zero)
  - Assume 20% marginal tax rate -> $588.60 impact on government budget

- Can recover implied fiscal cost
  - Average household transfer: $1,153.25
  - Total cost is $1,153.25+$588.60=$1,741.85.

- So:
  \[
  \frac{1}{\text{Cost}} = \frac{1}{|I|} \int_{i \in I} \frac{d\hat{t}_i^p}{d\theta} di = \frac{1,153.25}{1741.85} = 0.66
  \]

- What about Benefits?
Food stamps are “in-kind”: $\frac{\partial u}{\partial G} \neq 1$

- May be that $\frac{\partial u}{\partial G} < 1$ because goods are in kind
  - Smeeding (1982) estimates 0.97; Moffitt (1989) estimates ~1
  - Whitmore (2002) estimates 0.80 for marginal/distorted recipients

Assuming food stamps valued as cash, MVPF is 0.66

- Concerns?
- Will return to methods for estimating $\frac{\partial u}{\partial G}$ later in the semester
Government has programs that provide job training
  Potential impacts?
Job Training Partnership Act of 1982 provided job training services to low income youth and adults
Bloom et al (1997) report results from RCT (I focus on adult women impact)
  Main finding: Earnings increase of $1,683
  Does this matter for welfare?
  Increased tax collection of $236
  Reduction in welfare benefits (AFDC) $235
  $471 net increase in government budget from behavioral responses
Marginal cost of providing the training is $1,381
  Cost net of fiscal externality is $910
MVPF is 1.52 if program costs are valued at its costs
No estimates of $\frac{\partial u}{\partial G \lambda}$ for the program

- Bloom et al. (1997) implicitly assume earnings is fully valued
  - When is this OK?
  - Exercise: show earnings impacts matter if they come from relaxing constraints (e.g. higher wages) but not from changing labor effort

- Earnings increase of $1,683$ for marginal cost of $1,381 \rightarrow \frac{\partial u}{\partial G \lambda} = 1.22$
  - Suggests MVPF of 1.85 if increase was entirely productivity
  - But could be MVPF = 0 if no one valued it?
Section 8 Housing Vouchers

- Section 8 is largest low-income housing program in US
  - Provides vouchers to low-income households (see MTO experiment, etc.)
- Households pay 30% of their income for rent
  - Voucher covers the rest (subject to cap)
    - Later in semester: Collinson and Ganong on switch to “Small Area Fair Market Rents”
  - Removed from voucher program if income too high
- Section 8 is not a “right”
  - Need to apply at housing authorities
Jacob and Ludwig (2012) exploit excess applications in Illinois

- Allocated via lottery
- Estimate significant impact on labor supply and welfare take-up
  - Earnings decrease implies fiscal externality of $129 per voucher
  - Welfare programs increase sum to $432 (mostly medicaid)
  - But vouchers are a lot of money ($8,400/yr)
  - Voucher cost $1.05 for every $1 of vouchers

\[ MVPF = 0.95 \frac{\partial u}{\partial G} \frac{1}{\lambda} \]
Reeder (1985) suggests $1 vouchers valued at $\frac{\partial u}{\partial G} = 0.83$

People consume too much house?

Suggests MVPF of 0.79 for housing vouchers

Later in course: MTO and restricted vouchers to “high opportunity” neighborhoods

Chetty, Hendren, and Katz (2016) document impact on kids...
| Policy               | $\frac{\partial u}{\partial G}$ | $\frac{1}{|i|} \int_i \frac{d\hat{t}_i}{d\theta} di$ | $MVPF$  |
|---------------------|----------------------------------|----------------------------------|---------|
| Top Tax Rate        | 1                                | 1.33 - 2                         | 1.33 - 2|
| EITC Expansion      | 1                                | 0.88                             | 0.88    |
| Food Stamps         | 0.8 - 1                          | 0.66                             | 0.53 - 0.66|
| Job Training        | 0 - 1.22                         | 1.52                             | 0 - 1.85|
| Housing Vouchers    | 0.83                             | 0.95                             | 0.79    |

- Taking $MVPF^{TopTax} = 1.33$, increasing EITC and top tax rate desirable iff
  $$\eta^{Rich} \leq \frac{0.88}{1.33} = 0.66$$

- $0.66$ to a poor person or $1$ to a rich person?
- Question: What about MEB comparisons?
Takeaways

- Need causal effect of policy in question
  - Is this what we used?
  - ATE/ATT/ITT?
- Also need WTP for non-market goods
  - This is the hard part!
- But, results suggest desire to focus on causal effects that effect government revenue
What about other policies?
- Public goods?
- Education?
- Insurance mandates?
- Information campaigns to increase take-up?
- Medicaid expansions?
Medicaid

- Will discuss WTP for health insurance later in semester
- For now, look at impacts of Medicaid coverage for children on govt costs
- Recent paper: The Long-Run Effects of Childhood Insurance Coverage: Medicaid Implementation, Adult Health, and Labor Market Outcomes by Andrew Goodman-Bacon (NBER WP #22899)
  - States varied in their medicaid expansions to children (See Gruber)
  - Explore variation in state of birth by cohort in exposure to Medicaid
Figure 4. First-Stage Relationship Between Cumulative and Initial Medicaid Eligibility Before and After Medicaid Implementation

Notes: The dependent variable is each cohort’s cumulative, migration-adjusted Medicaid eligibility for ages 0-18.
Figure 7. Reduced-Form Event-Study Estimates of Medicaid’s Effect on Employment Rates and Disability Benefit Receipt, White Respondents (coefficients×100)

Any Employment
Pre-Trend (-23,-10): -0.002 (s.e. = 0.011)
Phase-In Trend Break [-10,0): 0.048 (s.e. = 0.015)
Post-Medicaid Trend Break: -0.035 (s.e. = 0.016)

Any Disability Benefits
Pre-Trend (-23,-10): -0.012 (s.e. = 0.012)
Phase-In Trend Break [-10,0): -0.022 (s.e. = 0.015)
Post-Medicaid Trend Break: 0.036 (s.e. = 0.007)

Notes: The dependent variable is the share of white respondents in each state-of-birth-by-cohort cell who report having any annual employment (closed triangles) or receiving income from a disability-related transfer program.
If health insurance for children increases their outcomes in adulthood, what does this mean for welfare?

- Lowers effective cost of the government program!

Welfare framework says “measure the real costs” not the program costs that are the line-item on the budget

- Account for the impact of behavioral responses.
Welfare framework suggests measuring benefits and costs
- Benefits given by individual’s WTP
- Costs inclusive of fiscal externality

Key limitations
- Dynamics? Others?
- Behavioral biases? v versus u?

But we’re not done: Aggregations across people require social welfare weights
- How to identify?
- Surveys (Saez and Stantcheva, 2013)
- Inverse Optimum Approach (Next Topic)