### 14.471: Fall 2012: Recitation 13: Overview Tax results

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| Commodity | Diamond ('71) / Pigou | (i) Agent-specific lump sum  
(ii) Same per unit contribution to pollution  
(iii) Pollution aggregator | Corrective tax restores efficiency  
*I instrument: $x$ tax/unit consumed vs. $y$ contributions/unit consumed |
| Commodity | Single Ramsey | (i) Only linear taxes | $\Sigma t_i \frac{\partial x}{\partial q_i} = -x_i \theta$  
*Discourage goods by same % |
| Commodity | Diamond-Mirrlees ('71) Production efficiency | (i) Only consumers enter welfare  
(ii) Intersector transaction tax (e.g. profits if no CRTS)  
(iii) $\neq$ rates per good/factor | Optimal commodity tax implies production efficiency  
(e.g. no intermediate good tax)  
*Tax final goods: no factor distortion |
| Commodity | Uniform commodity | (i) $U(G(x_1, ..., x_n), H(x_{n+1}, ...))$  
(ii) $G, H$ are HD1 | $\tau_1 = ... = \tau_n, \sigma_{n+1} = ... = \sigma_{n+m}$ |
| Commodity | Multiple Ramsey | (i) Only linear taxes  
(ii) Lump-sum $I$ | $E_h \sum_t t_i \frac{\partial x^{c,h}}{\partial \sigma_i} = X_j Cov_{h \mid \frac{x^h}{X_j}, \beta^h}$  
Discourage less goods of high SMU agents |
| Income | Mirrlees ('71) | (i) Heterogeneous skill  
(ii) Only earnings available  
(iii) Bounded wealth distribution  
(iv) Utilitarian SWF | Zero MTR at top  
*Reducing MTR @ top (i) does not reduce tax liability above (“there is nobody”)  
(ii) improves incentives/tax bill @ top  
*Speed @ which density falls=∞  
Positive MTR $T'(Y) > 0$ (vs. Diamond ('80))  
*Contradiction: Higher $T'(Y) \uparrow$ revenues  
(i) above: $+z$ redistribution  
(ii) $@ Y'$: Lower subsidy |
| Capital/Income | Atkinson-Stiglitz ('76) | (i) Non-linear income tax  
Utility $u^k(c_1, ..., c_K, z))$:  
(ii) Separable leisure $z$ from $(c_1, ...)$  
(iii) $u^i() = U^h(v(c_1, ..., c_K), z)$ where $v$ does not depend on $i$  
(iv) No bequest (1-dimensional inequality) | No commodity/capital tax  
*Conditional on earnings, consumption does not give info on ability  
*1 instrument vs. 1 dimensional inequality |
| Capital | Chamley-Judd('85) | (i) Infinite horizon  
(ii) No uncertainty  
(iii) Infinite supply elasticity capital  
(iv) Welfare measure $t = 0$ (dynasty) (“time consistency”)  
(v) 1 agent (robustness Werning (2007)) | At s.s., tax on capital is zero.  
*Capital tax $\sim \frac{E_{c2T}}{T_{c2T}^2}$  
Uncertainty: Idiosyncratic income (NDPF)  
$\frac{f_{WeilfareMeas}}{WelfareMeas}$. Are children of parents with 0 taste for bequest included? |
| Income | Werning('07) | (i) Pareto Efficiency criterion  
(ii) Continuum types  
(iii) Additive consumption & disutility labor | Any $T(Y)$ is efficient for many $f(\theta)$ ...  
and inefficient for many $f(\theta)$  
*Many relevant empirical parameters (skill density, income elasticity leisure, ... labor supply elasticity) |
| Capital | Rogerson ('85) New Dynamic PF | (i) Uncertain future productivity  
(ii) Leisure is normal good | Positive tax on savings  
*Savings reduce labor  
*Tax $\uparrow$ ability insurance against future poor labor outcomes  
Note: rather small welfare gains? |