

Centre for Health Economics
Seminar Series
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‘Does the framework of economic evaluation
reflect social objectives: or costs, fairness
and reverse order analysis’

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Chief references

- Richardson J, McKie J 2006, The role of costs in a national health scheme: a fairness-based framework for economic evaluation, *Journal of Health Economics*, (submitted)

Efficiency First, versus Fairness First

- Hypothesis
 - (Welfare) Economics has become an 'efficiency first' paradigm to the neglect of other social objectives
 - Non economists = fairness first (lexicographic ordering of fairness issues)
- What this implies:
 - 'World view' of core beliefs (axioms, behaviours, values)
 - Objectives ← assumptions, not ethics/elicited pop values
 - Issues of social value redefined to be about efficiency
- What it does not imply
 - Complete disregard of fairness
 - Hypothesis applicable to all economics

Outline

1. Initial problem
 - Public attitude to 'economic costs'
2. Fairness First: 5 examples
3. Theory
 - Hypotheses
 - Failure of orthodoxy
 - Empirical Ethics
4. Four studies with respect to Fairness First hypothesis
5. Conclusion

Postscript: is welfare theory an apologia for the wealthy?

1. Problems with cost

Nord & Richardson (1995)

Who cares about cost: Does economic analysis reflect or ignore social values?’

Theme: Public view of role of cost

STAGE 1 (Postal Questionnaire, $n = 551$)

Should we give preference to high or low cost diseases?

Arguments

- prefer low cost → more health but:
- discriminates against high cost

Result

- prefer low cost 22%
- equal priority 78%

STAGE 2 (Interview) Repeat emphasising budget

$n = 119$ constraint; words used, have some priority
 prefer low cost ... 30%

STAGE 3 Challenge but more health possible
 ... No change

STAGE 4 Numerical example
 Low cost vs first come, first served → low cost

STAGE 5 Allocate a budget between low cost –
 high cost - consequences shown
 low cost ... 6% select max life

- Abellan-Perpinan & Pinto (1999)

Allocate a budget

	A	B
Cost	100	200
Benefit	Same	Same
Public preference: Ratio of spending	1 : 2	

- Ubel (2000)

Allocate organs

* % good prognosis: opportunity cost = poor prog. patients

* % poor prognosis: opportunity cost = good prog. patients

What is going on?

- Is inefficiency rational?
- Does fairness take lexicographic precedence over efficiency (implying need for new framework)
- Richardson & McKie (2006)
 - Is economics out of step (at least in health economics)?

2. Five 'Fairness First' Examples

1. Efficiency rule, marginal cost – marginal benefit ... ✓✓
2. Indirect benefits in CBA
3. (Un)Related future costs in CBA
4. Moral hazard ... ✓✓
5. Transfer payments ... ✓✓

Fairness and economic theory

Marginal cost vs marginal benefit

- Utility maximisation:
marginal cost = marginal benefit

Utility maximisation and marginal cost and marginal benefit

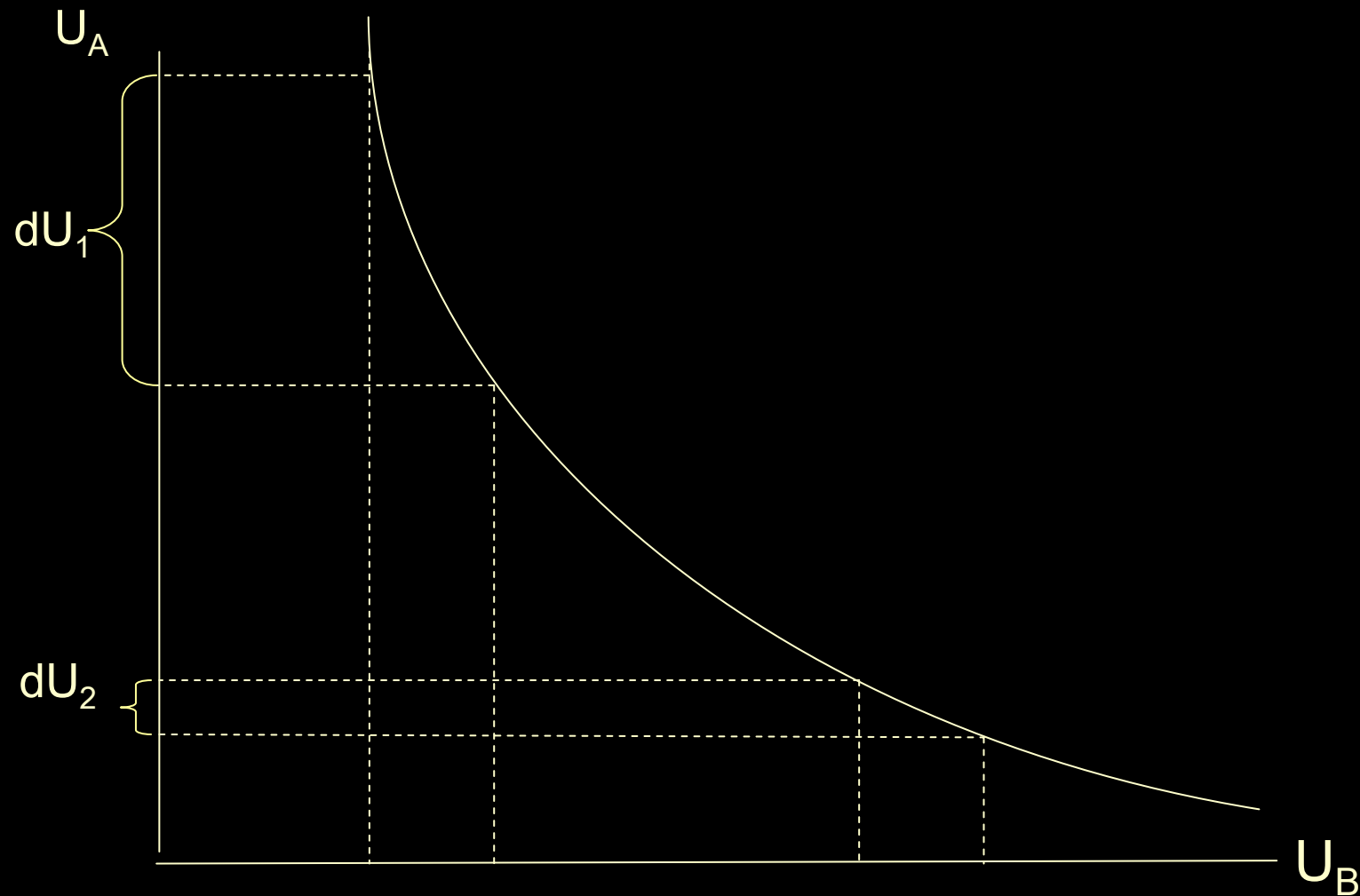
	What is the fair allocation of health expenditure (\$000)				
Disease	A	B	C	D	E
Benefit of cure	40	40	40	40	40
Cost/person	10	20	30	40	41
Optional Social spending	10	20	30	40	0
Personal out-of pocket	0	0	0	0	41

Is D special?

Utility maximisation

- Can it be rational to ignore (MC = M Ben) Rule
- Yes
 - Parent: ↓10 utils; their child ↑ 8 utils
 - Taxpayer: ↓ 5 utils; beneficiary ↑ 10 utils
- Conclusion
 - Ignored in CBA
 - (even) consistent with welfarism

Social Welfare Function



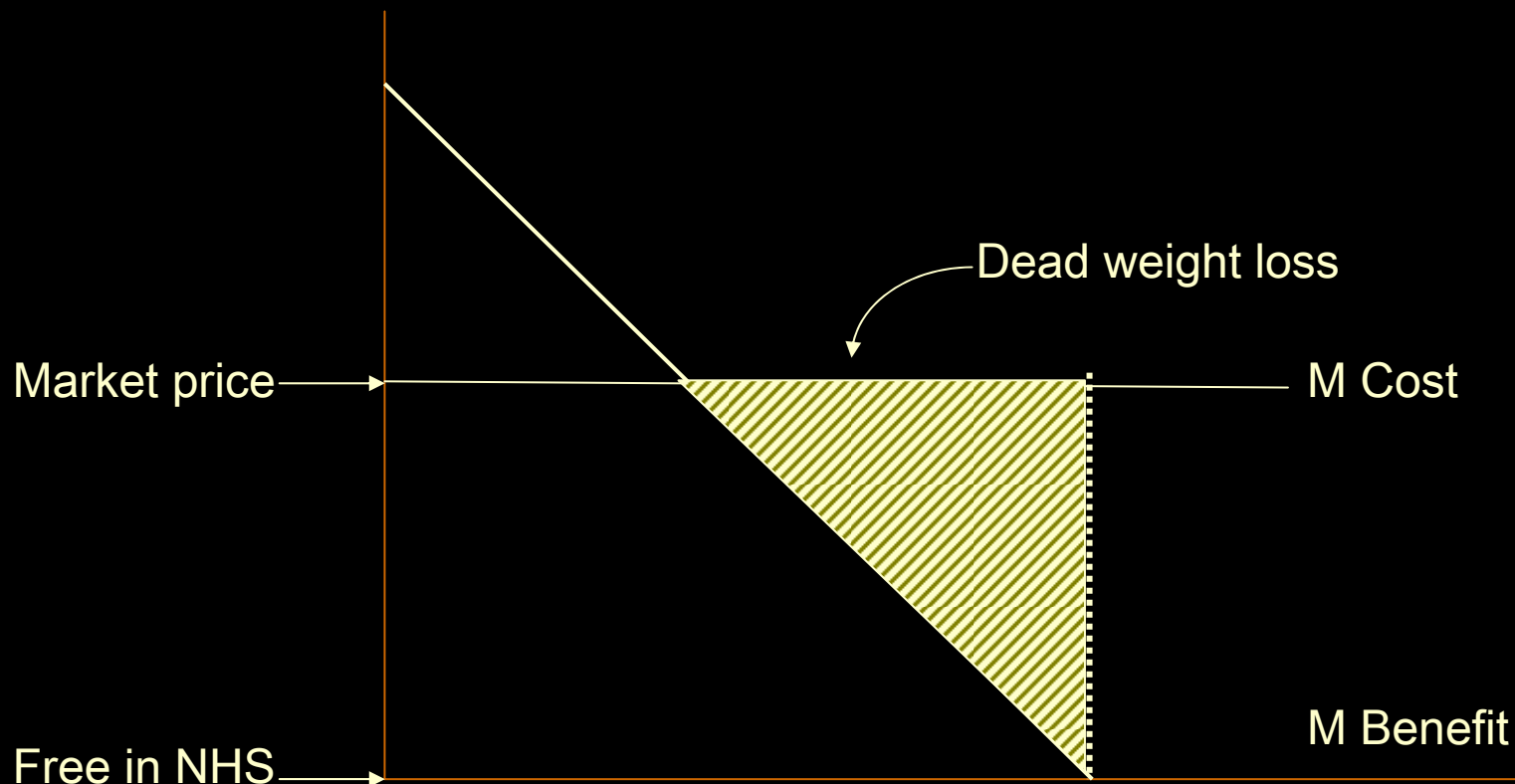
Conclusion

- Orthodox theory ... consider fairness
(v limited range of issues)
- Orthodox practice ... ignore

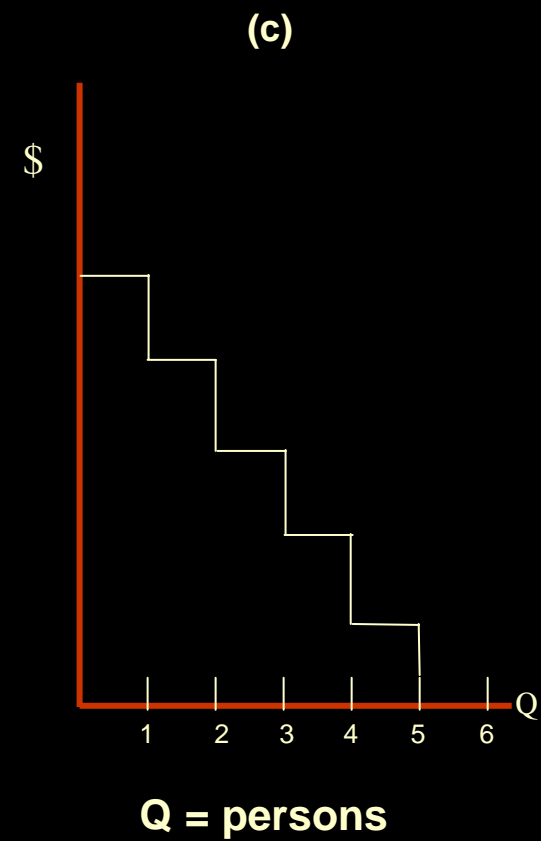
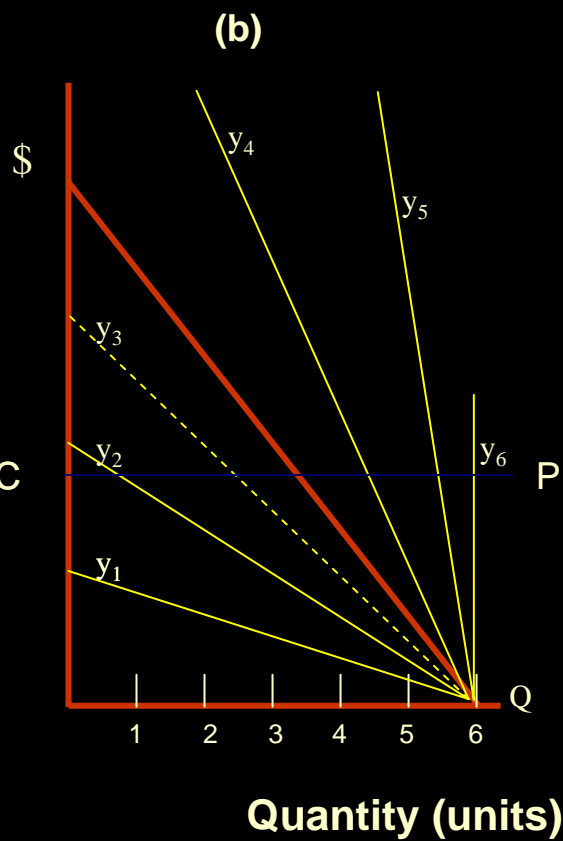
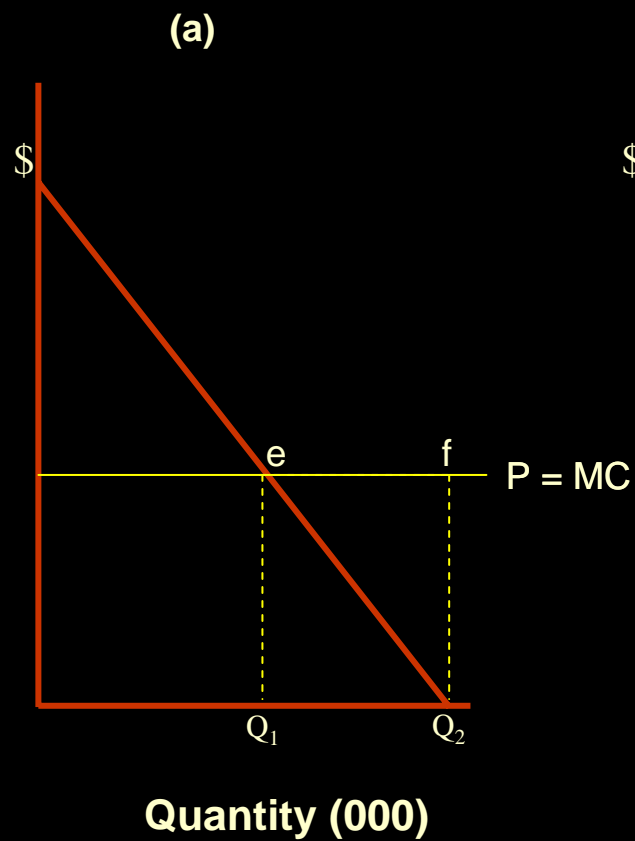
Moral hazard

- Insurance → overuse
→ dead weight loss 'inefficiency'
- Conclude co-payments → efficiency ↑

Case 4. Moral Hazard



Conclude: dead weight loss of insurance ('clean' efficiency conclusion)



Co-payments and fairness

	Full Price		'Free' Price (tax)	
	Purchase	Cost	Purchase	Price
Rich	Yes	Price	Yes	2 x price
Poor	No	0	Yes	0

Moral Hazard Co-payments

Group	Issue	Category
Doctors	Control of income	Distribution
Social welfare groups	Access & poor	Distribution
Wealthy	Tax ↓	Distribution
Economists	Consumer surplus Inefficient services	Efficiency

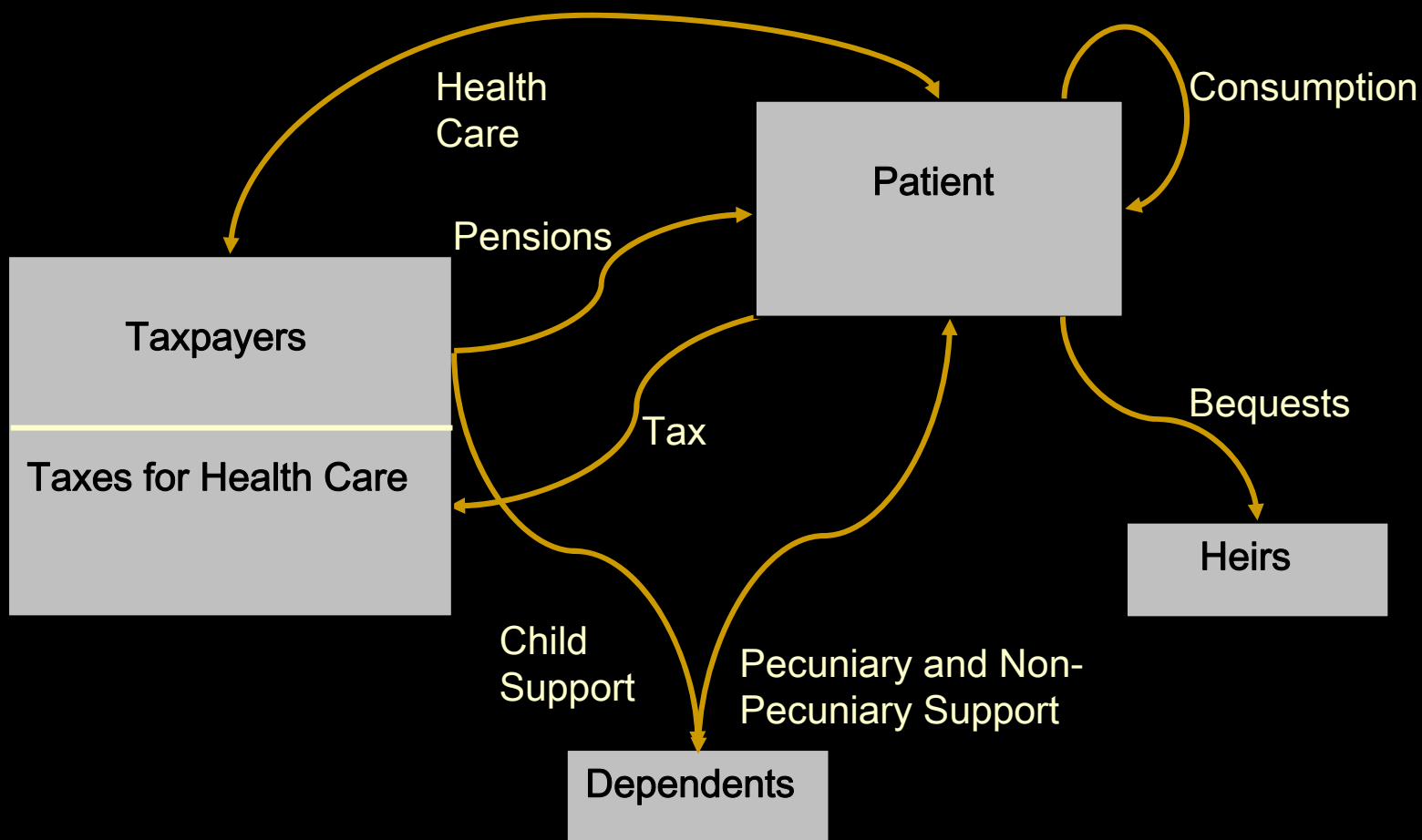
Case 5. Transfer Payments

Orthodox rule: disregard transfer payments

A, B => same benefits	Patients A	Patients B
A. Medical cost pa	\$10,000	\$8,000
Cost to taxpayer	\$10,000	\$8,000
Ranking: usual criterion	2	1
Broader Framework	(needs support)	(self supporting)
As above		
Pension if untreated	\$4,000	0
Total cost to taxpayer	\$10,000	\$8000 + \$4000 = \$12000 le cost + pension
Ranking by taxpayer	1	2

Conclude: ranking by taxpayer \neq ranking by economics

Schematic diagram of financial flows



Key points from examples

- Importance of some elements of orthodoxy attenuated... irrelevant (indirect benefits)
= benefits from patient to patient
- Importance of some elements of orthodoxy increases ... (transfers)
- Attempts to diminish role of ethics – replace with ‘technical’ (‘theoretically correct’) analysis

3. Three Theoretical Issues

- Theoretical basis of 'Fairness First'
- Failure of orthodoxy (in Welfare analysis of health sector)
- Alternative: 'Empirical Ethics'

Hypotheses with respect to health sector (and others?)

- Fairness (almost) obliterates other concerns
- Fairness (almost) always relates to interpersonal comparisons
- Fairness is therefore primarily concerned with flows between people – not economics costs
- Orthodox theory (almost) obliterates or trivialises fairness
- Orthodox theory (almost always) focuses upon individuals
- Orthodox theory (almost) obliterates language of ethics; in some formulation the only survivor ‘utility’ is trivialised by tautological definitions.

Key to failures of orthodox theory

Compensation principle and efficiency

orthodoxy: efficiency \rightarrow \uparrow income/output
 \rightarrow potential compensation of losers
 \rightarrow potential Pareto improvement

Compensation may be impossible

- Tax \uparrow \rightarrow health services \uparrow \rightarrow health \uparrow
compensation: tax sick; compensates taxpayer??!
- Reallocating resources \rightarrow some die

Pareto efficiency and the egalitarian Social Welfare Function

Fig 1 Weak Egalitarian

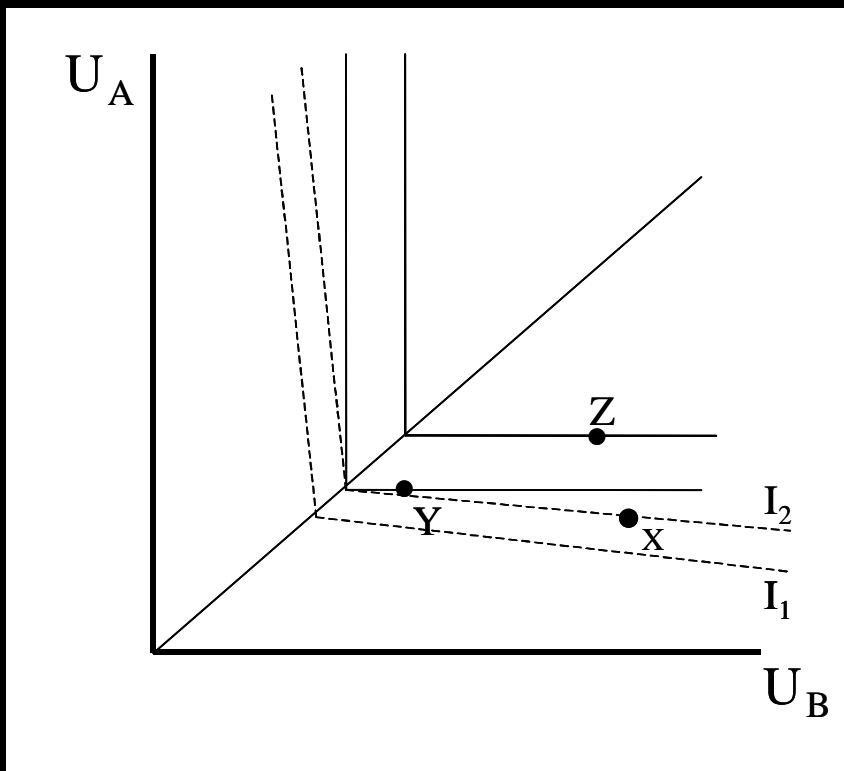
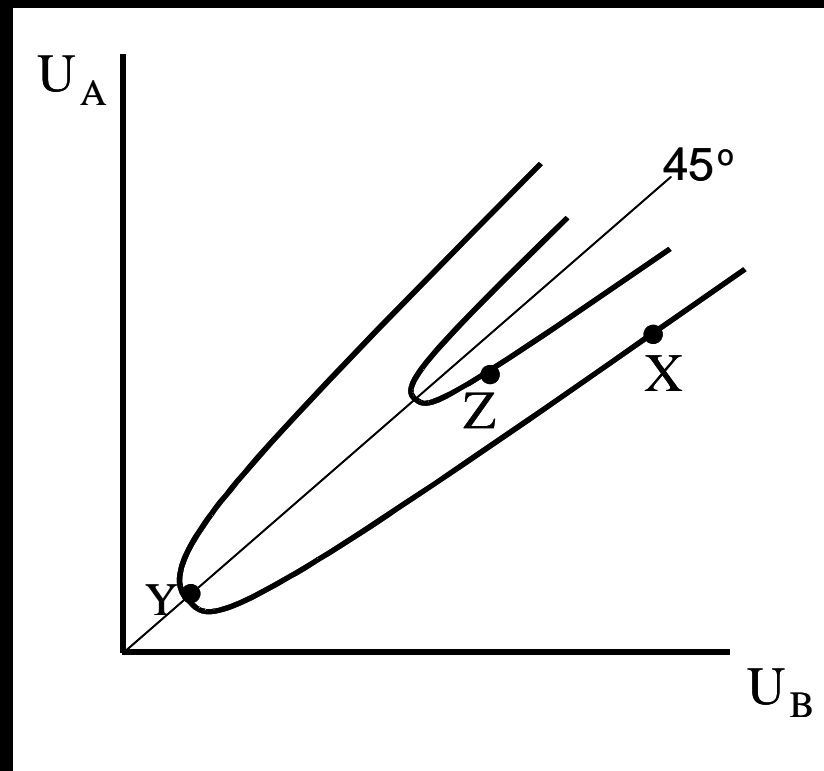


Fig 2 Strong Egalitarian



NB: egalitarianism may \leq envy
may \leq 'principle'

Alternative Framework: Empirical Ethics (EE)

Focus, first, upon flows between people

- 1 Iterative elicitation of values
Hypothesis generation, clarification
- 2 Quantification of social (value) preferences)
Deliberation
 - a. triangulation of issues
 - b. feedback (Delphi)
 - c. deliberative techniques
 - d. citizen juries (UK)
- 3 Ethics critique, (ie testing)
- 4 Resubmit for reconsideration, reformulation
- 5 Tentative acceptance
- 6 Modify to achieve technical efficiency

4. Four Empirical Studies

1, 2 Welfarism vs Extra Welfarism

- Social goal in a NHS is health not utility

3 Severity

- Objective is not just health maximisation

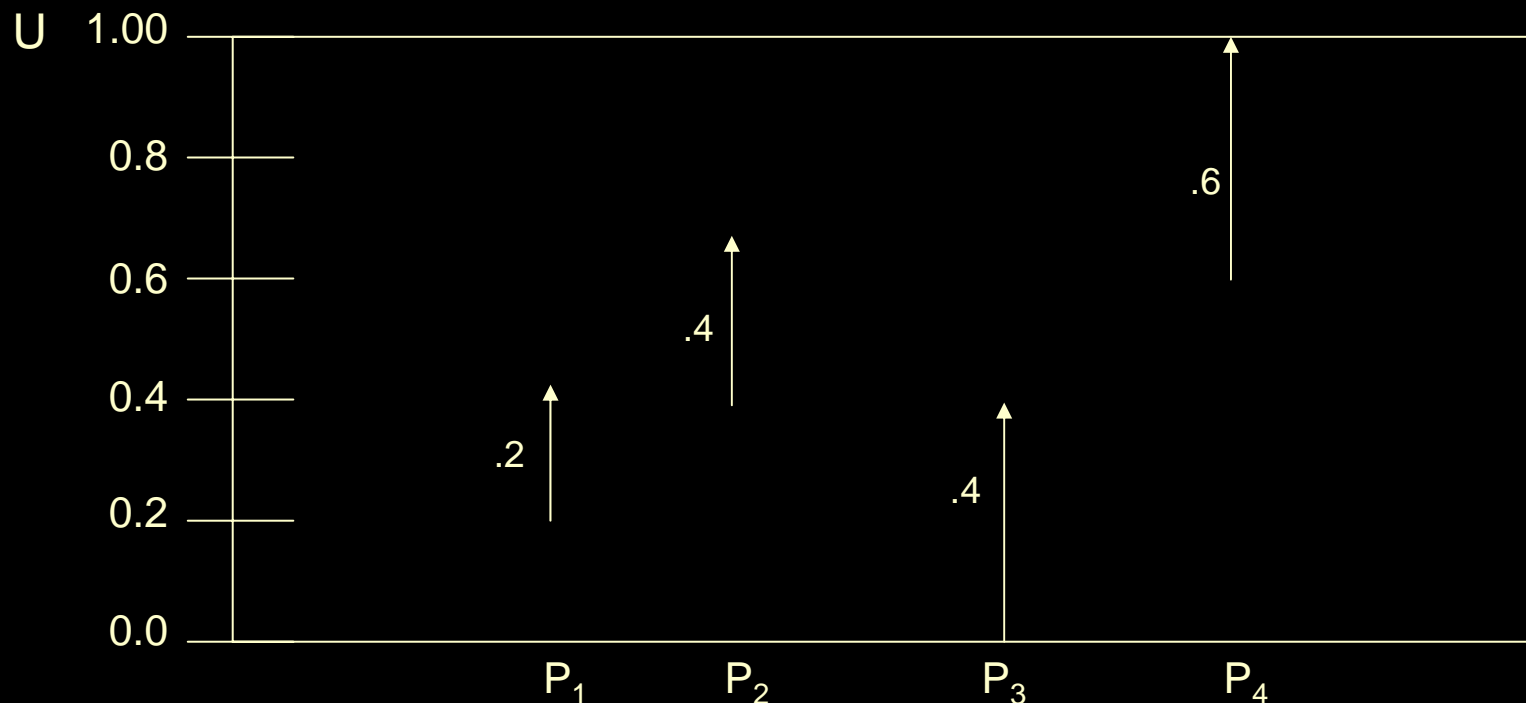
4 Value of a transfer dollar

- Costs to not cancel benefits

Study 3. Severity

- Orthodox economic evaluation
 - Social objectives : maximise utility (health)
 - Initial health state (severity) irrelevant

Adjustment 1: Severity Weights; Value of Changed Health State



$$P_1 (0.2 \rightarrow 0.4) > P_2 (0.5 - 0.8)$$

$$P_3 (0.0 \rightarrow 0.4) > P_4 (0.4 - 1.0)$$

Value Equations

Basic Severity Equation

$$\text{Value} = (\text{AQoL}_1 - \text{AQoL}_0)^\alpha (\text{DU}(\text{AQoL}_0))^\beta$$

Adjustment Dimensions may be valued differently by individual (for self) and by the citizen (for others)

Study 4. Value of \$1.00 health related transfer payment

- Hypothesis: Transfer payments to poor are more valued than transfer payments to rich
- Method: Postal questionnaire
 - Both a rich and a poor family have the service (ie health unaffected by choice below)
 - Whose service should be paid for by Medicare?
 - Questions vary incomes

- Which family should receive a benefit payment?

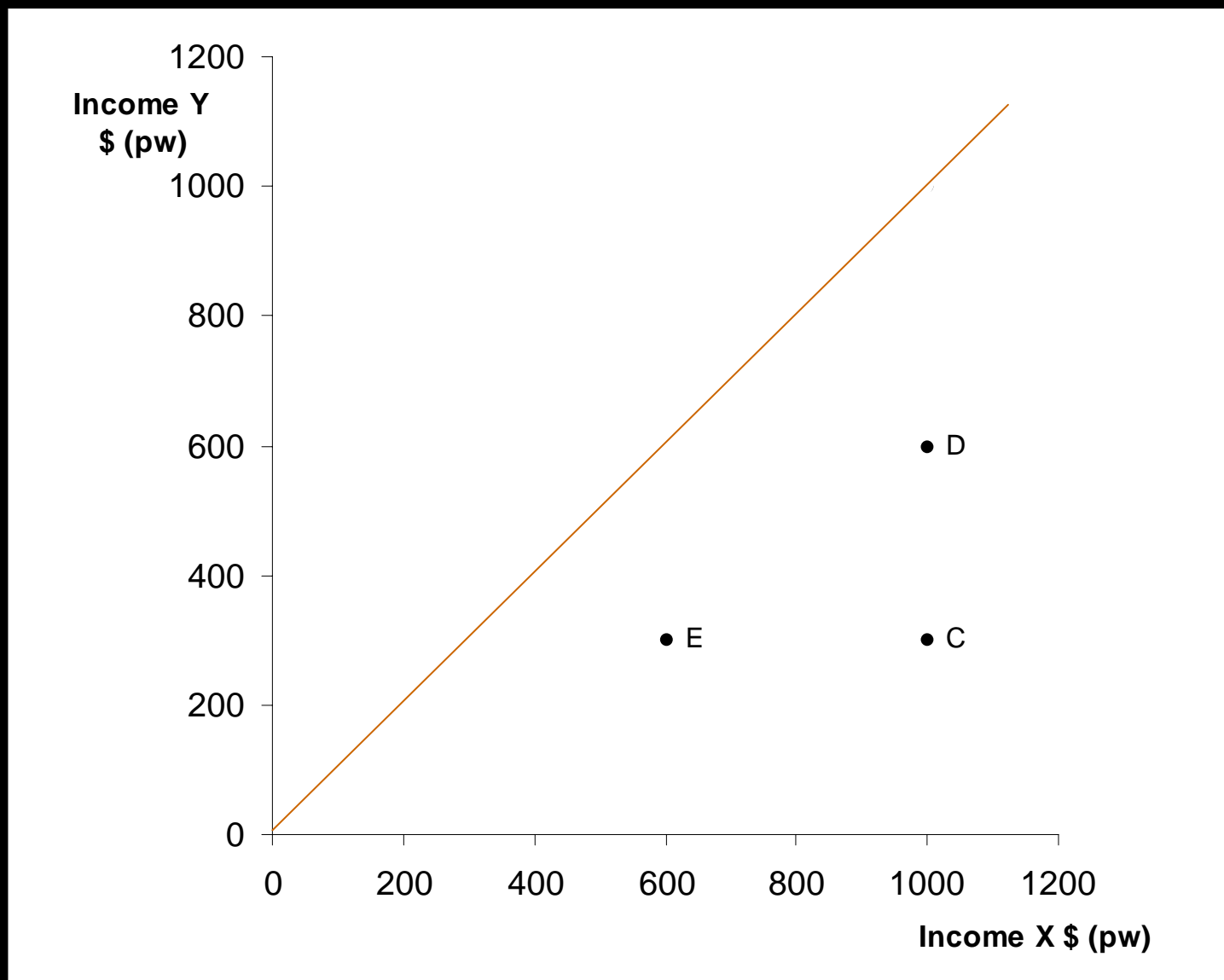
- Family X ... higher income
payment \$1000

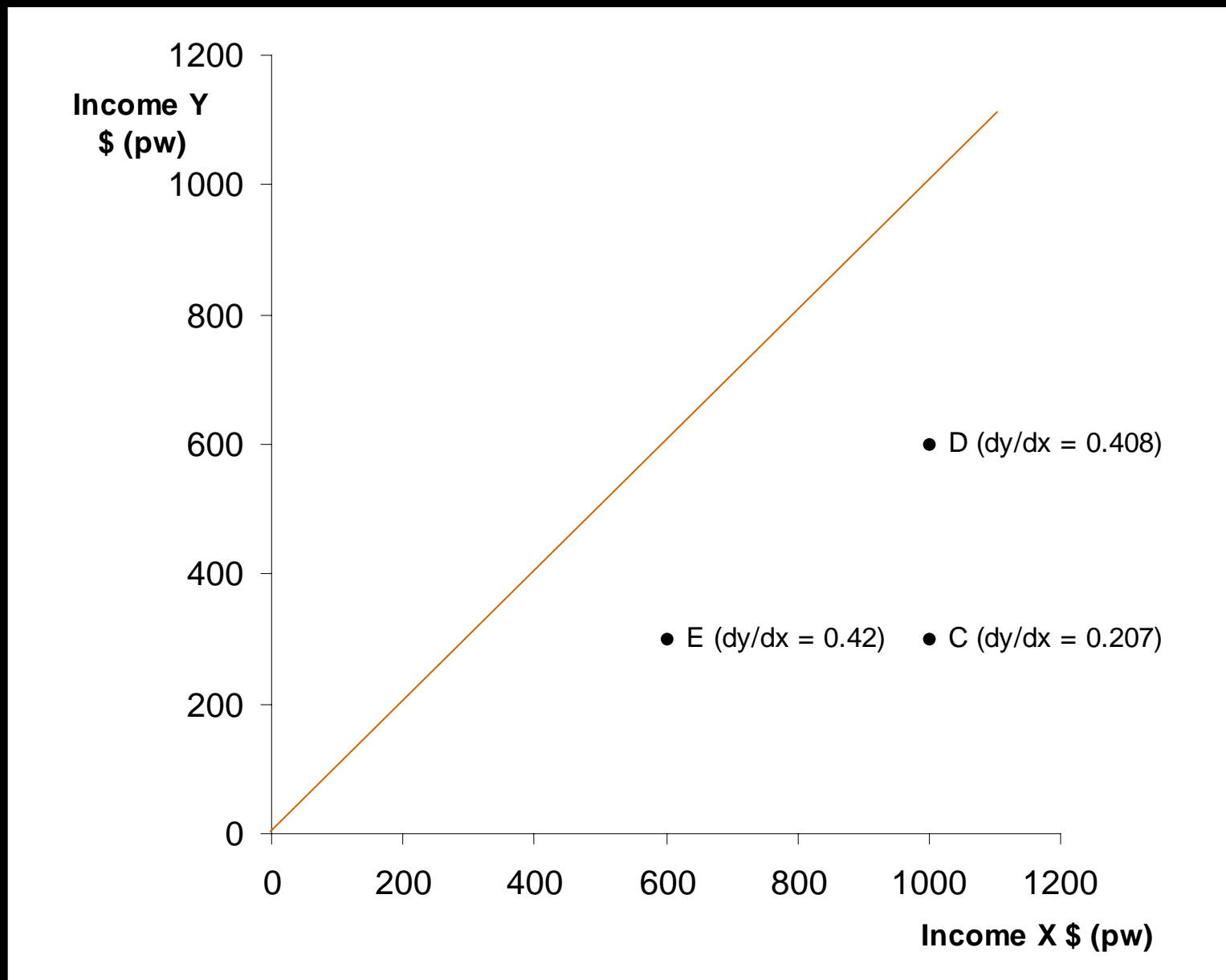
OR

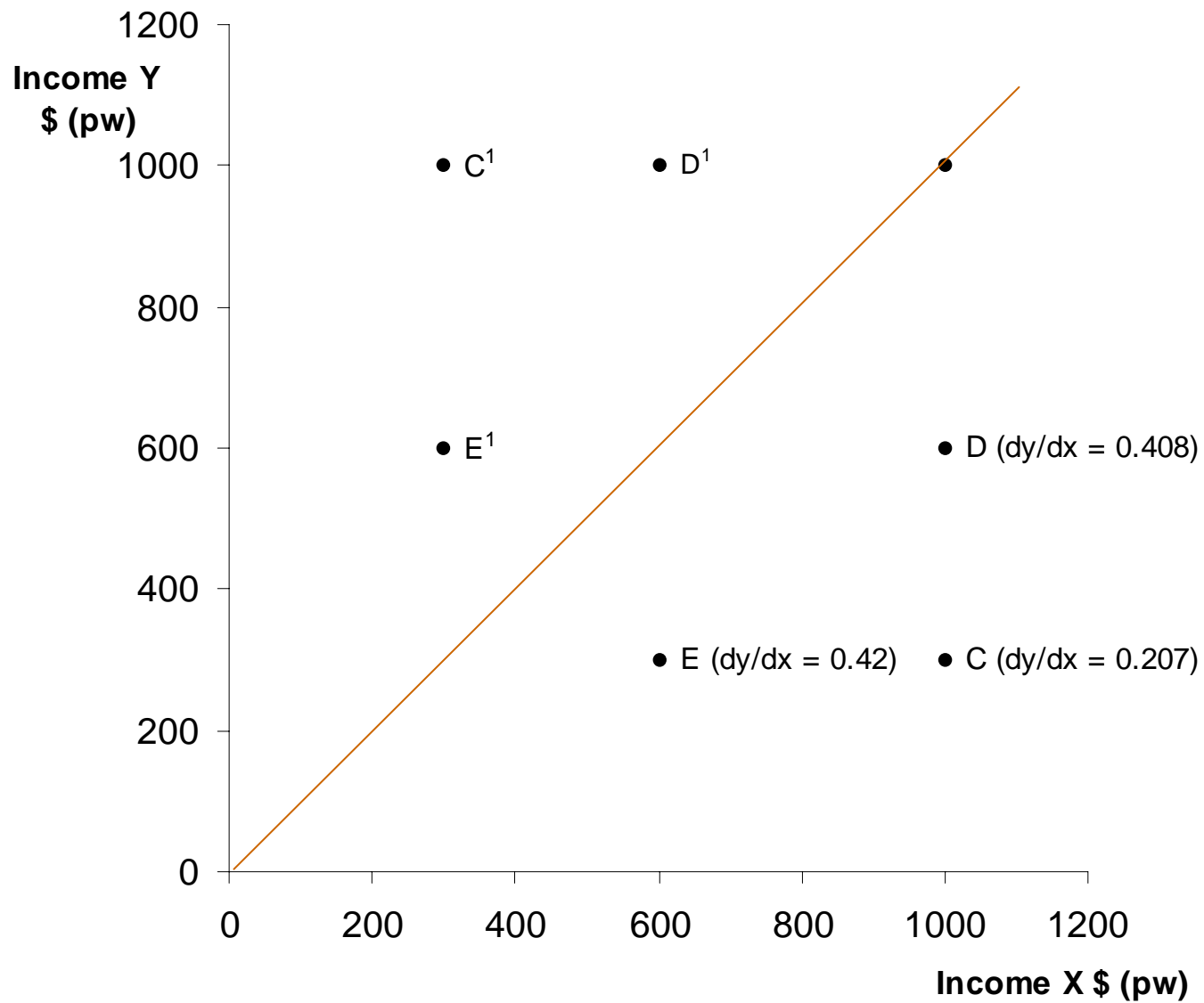
- Family Y ... lower income
payment lowered until
respondent can't decide

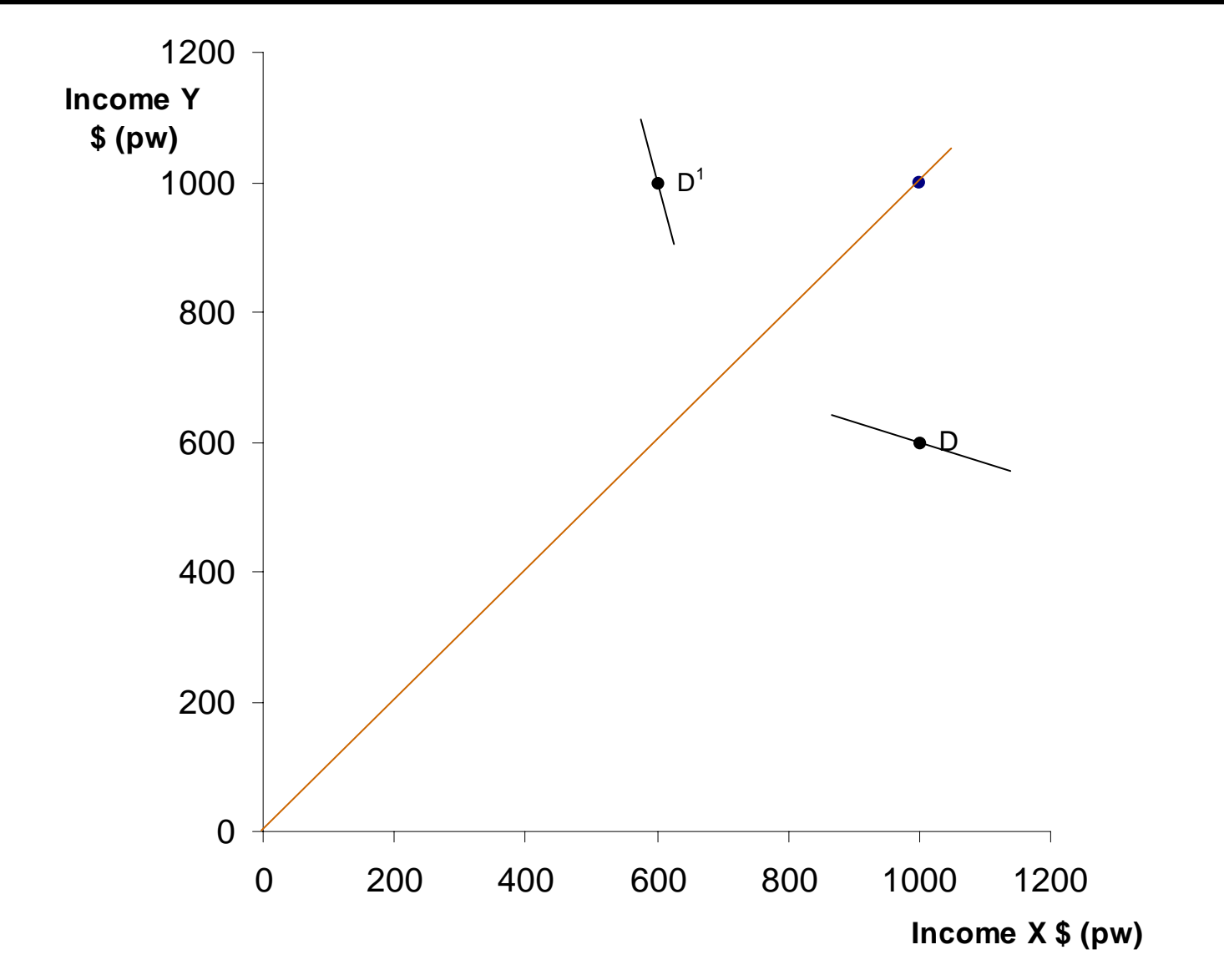
Results: Value of \$1.00 transfer

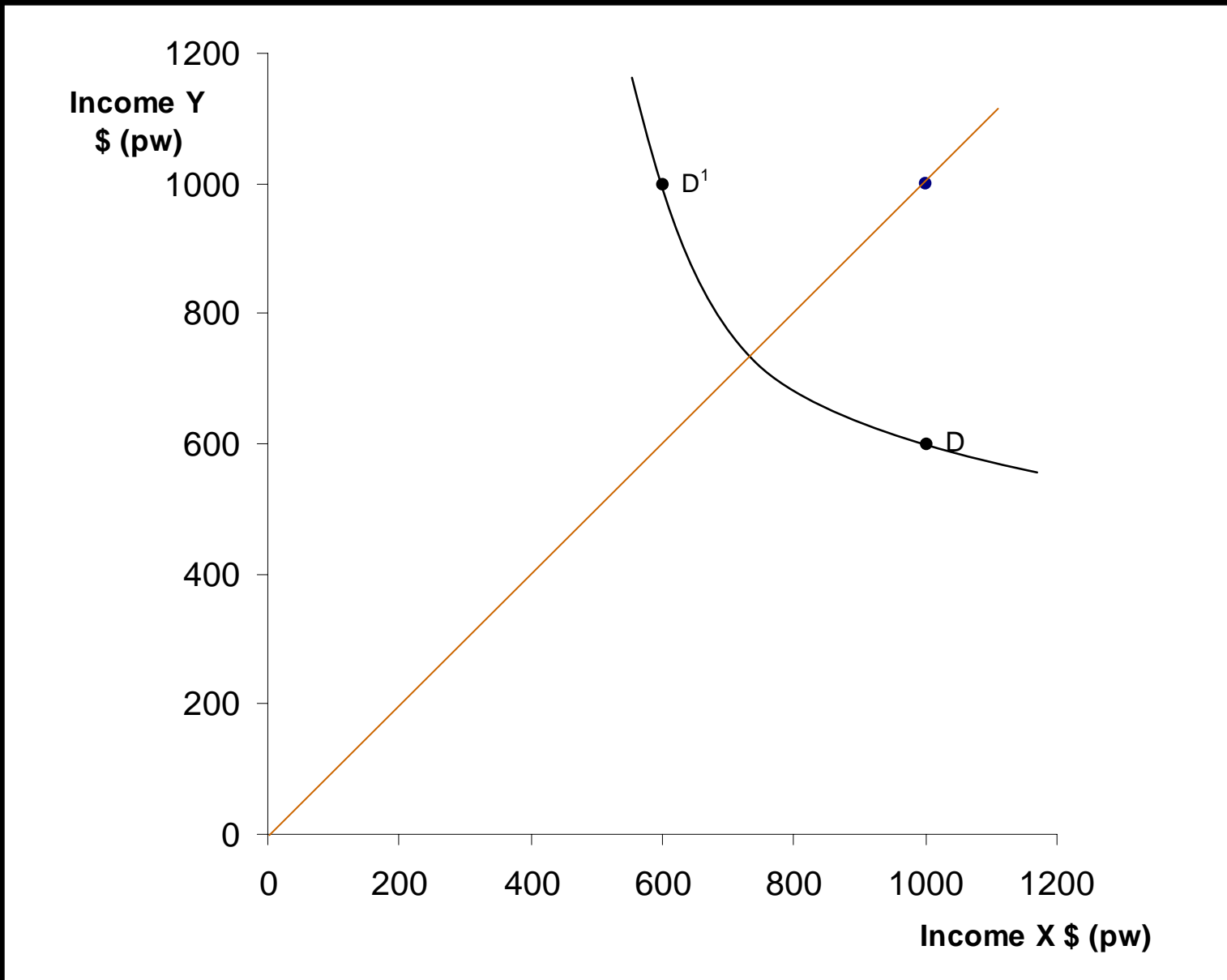
Income X	Income Y	Median payment to Y equal to \$1000 to x	Point on diagram	Slope of SWF $\frac{dY}{dX}$
(\$)	(\$)	(\$)		
2500	300	17	A	0.017
	600	56	B	0.056
1000	300	207	C	0.207
	600	408	D	0.408
600	300	416	E	0.416

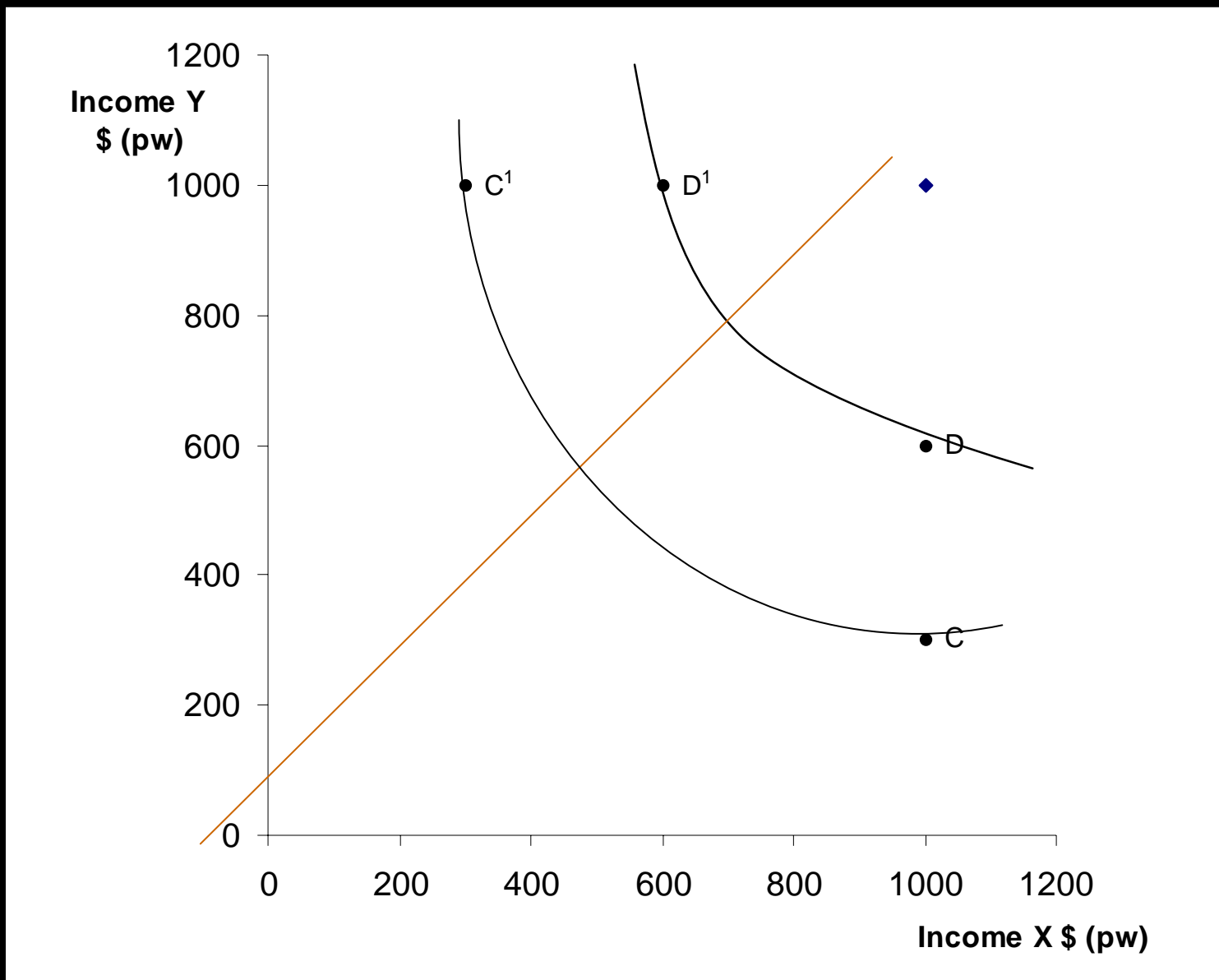


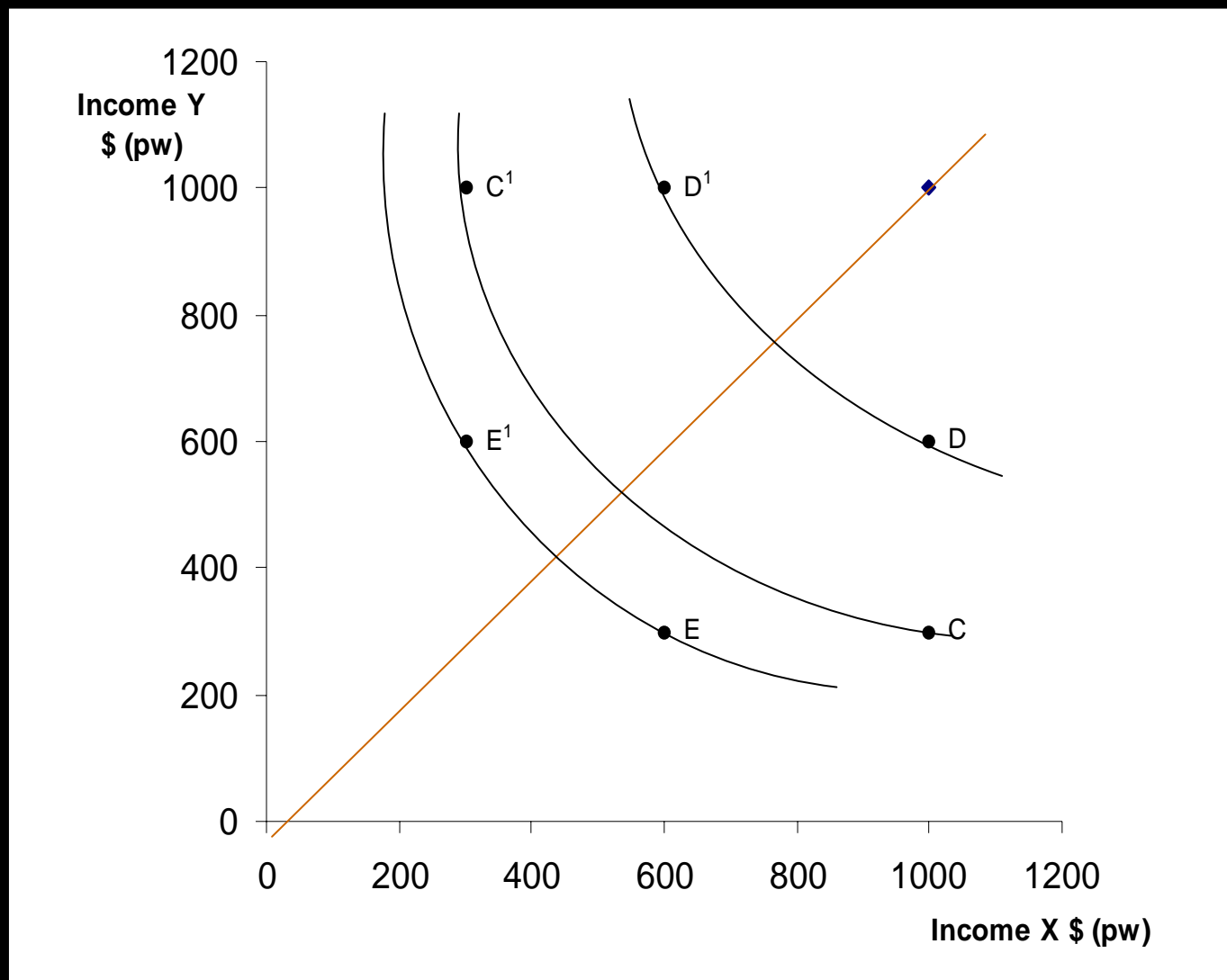












Should public preferences be considered relevant

- (*Prima facie* odd question ... answer 'yes')
- Economics
 - Cannot make interpersonal comparisons of utility
prove $M U_A > M U_B$
- Public/politicians
 - Can/do make comparisons
= judgement wrt fairness
≠ mod of efficiency

Conclusions

- Studies cited are simple
 - Economics conflicts with population values
 - ↙ public naïve
 - Public OK and consistent with 'fairness first'
 - ← Economists censor range of enquiry (health economics)
= efficiency first
- Alternative: Empirical Ethics
 - = method of physical sciences
- Agenda – eclectic studies, rules of fairness

Postscript: Is economics an apologia for the wealthy

- Assumption → Bias
- Example
 - Assume individuals empowered
 - Policies no exploitation
 - If assumption wrong exploitation likely
- Assumptions behind definition of efficiency favour wealthy

Conversion of fairness to efficiency

- M. Cost = M. benefit : Different people bare cost, benefit
- Indirect benefits : Benefits : patient
cost of cure = taxpayer
- Future unrelated costs: Causation → ethical outcome
- Moral hazard : Cross subsidy
Wealthy Healthy – unhealthy poor
- Transfer payments : Resources flow from tax payer
- beneficiary

Efficiency fairness and welfare theory

(Generalisations)

- Efficiency: outcome of a 'free for all' subject to assumptions
 - Information adequate
 - Power balanced
 - Self interest → Countervailing forces
→ Pareto efficiency
- Policy: non interference
 - If assumptions wrong exploitation likely
- Fairness/ethics
- Convert issues of fairness to efficiency
 - Favours powerful if assumptions wrong

Case of transfers

- Tax wealthy → ‘excess burden’
- Receipt of transfer → neutrality
 - Result: anti tax, anti welfare bias
 - Key assumption
 - Impossibility of interpersonal comparison

Tax and transfer

High Income

Low Income

Tax \rightarrow work \downarrow GDP \downarrow

\$1.00 Tax \rightarrow \$1.25 loss

$U(\text{loss}) > U(\$1.00)$

Tax and transfer

High Income

Tax \rightarrow work \downarrow GDP \downarrow

\$1.00 Tax \rightarrow \$1.25 loss

$U(\text{loss}) > U(\$1.00)$

Low Income

Transfer \rightarrow impossibility
of comparison

Treated as if

$U(\text{loss}) = (U \text{ Gain})$

Tax and transfer

Counterfactual

World without extra tax

... closer to 'ideal' (PC)

Work \uparrow , leisure \downarrow

(... contradicts SWB results)

Law of 2nd Best \rightarrow Doubt

Other: preference failures

- social pressure
- inflation of wants
(marketing)

Can we assume

$\uparrow U(\text{work}) > \uparrow U(\text{leisure})$

Yes: heroic assumption

Tax and transfer

Counterfactual

World without extra tax

... closer to 'ideal' (PC)

Work \uparrow , leisure \downarrow

(... contradicts SWB results)

Law of 2nd Best \rightarrow Doubt

Other: preference failures

- social pressure
- inflation of wants
(marketing)

Can we assume

$\uparrow U(\text{work}) > \uparrow U(\text{leisure})$

Yes: heroic assumption

Counterfactual

Income rich \uparrow

Income poor \downarrow

Can we assume

$\downarrow U(\text{poor}) > \uparrow U(\text{rich})$

No: too heroic

Conclusions 2

- Minimum requirement:
 - Economic evaluation/H. Ec
... fairness impact statement, all policies
 - Evidence on social values