

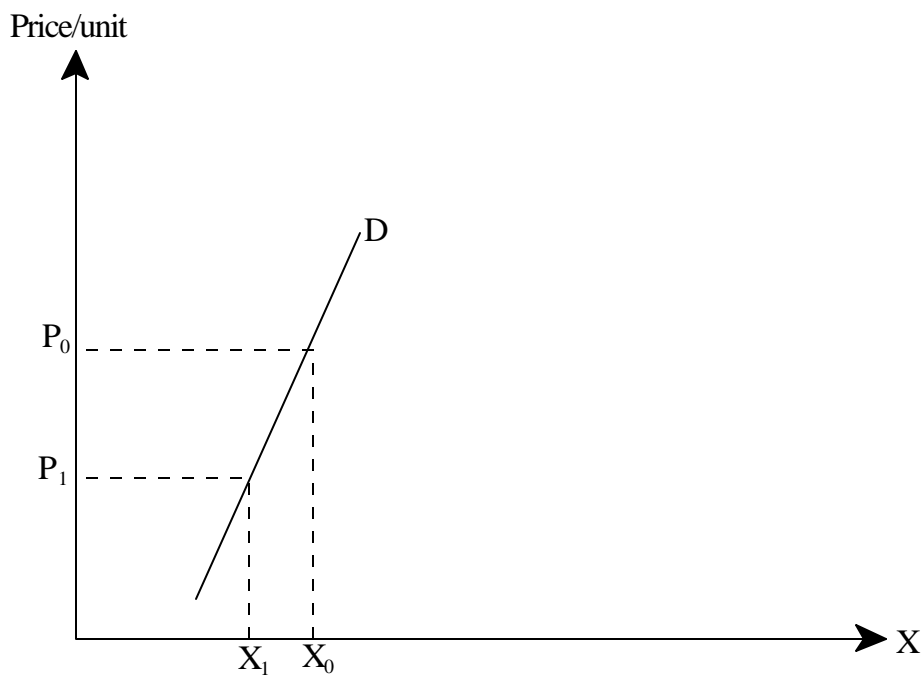
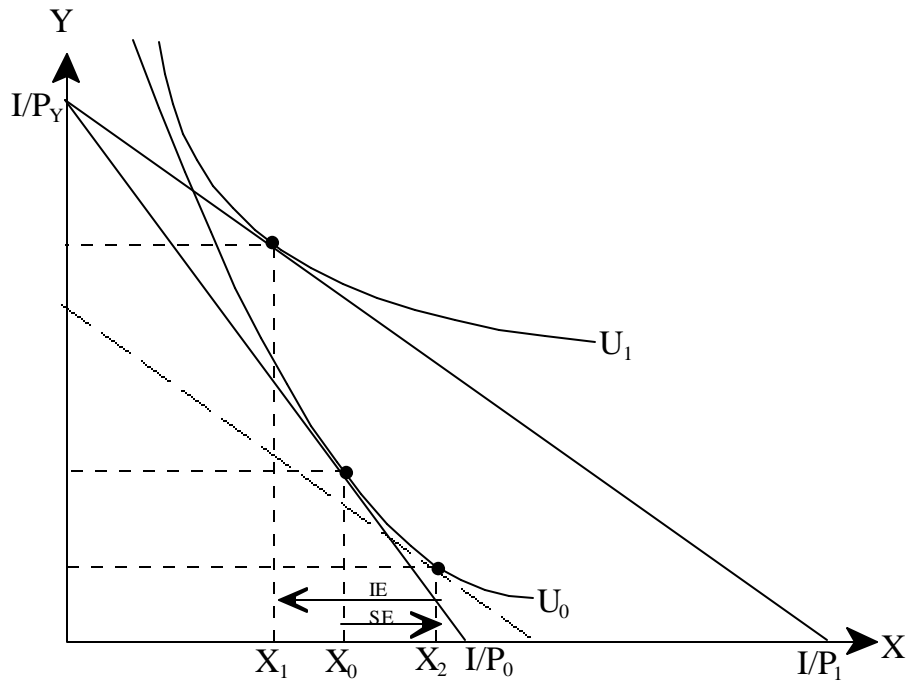
Problem Set #4 Key

Sonoma State University

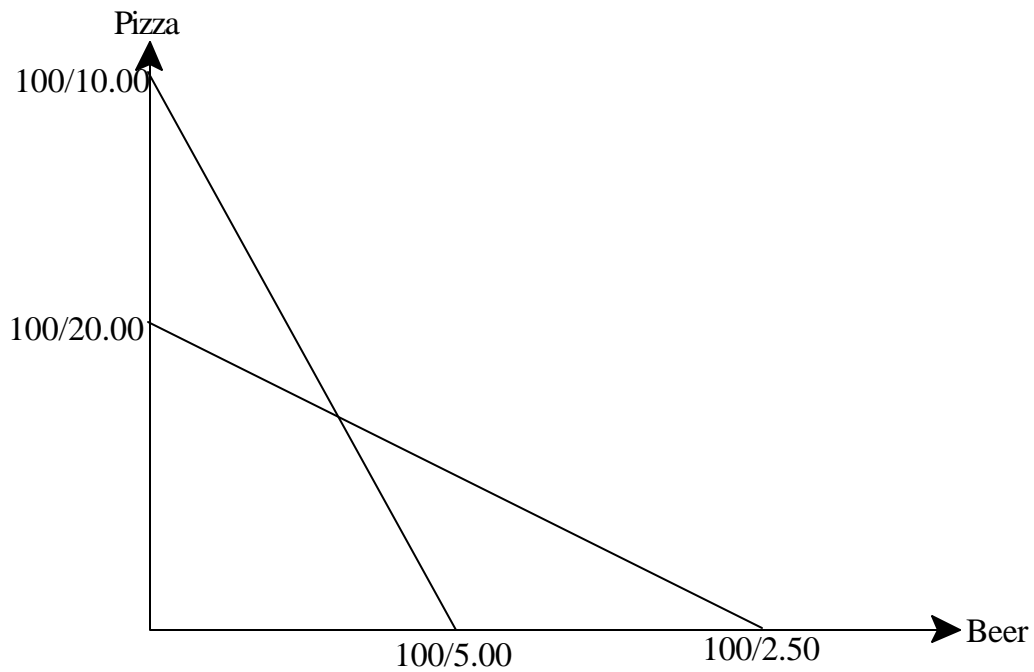
Dr. Cuellar

Economics 305-Intermediate Microeconomic Theory

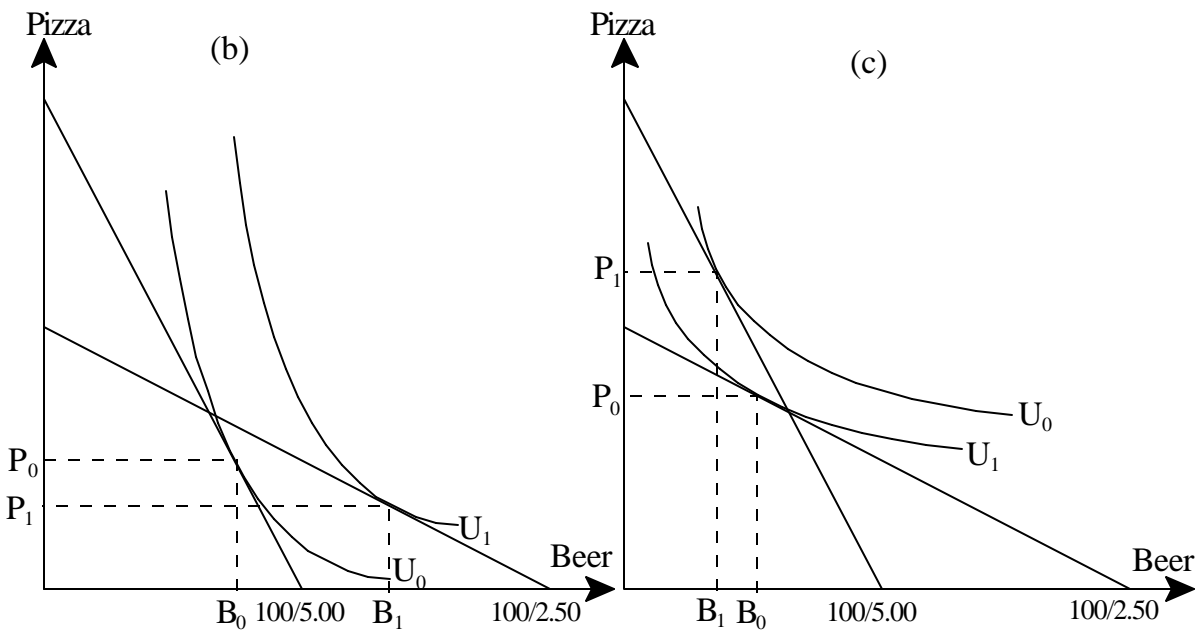
- (1) The law of demand implies a downward sloping demand function. Under what circumstances could you get an upward sloping demand curve? Explain fully and show graphically using the budget constraint-indifference curve analysis.



- (2) Suppose you consume only two goods, pizza and beer with prices $P_P = \$10$ and $P_B = \$5$ and that your income is $I = \$100$.
- (a) Show the effects on the budget constraint of an increase in the price of pizza to $\$20$ and a decrease in the price of beer to $\$2.50$. Put pizza on the y-axis and beer on the x-axis.



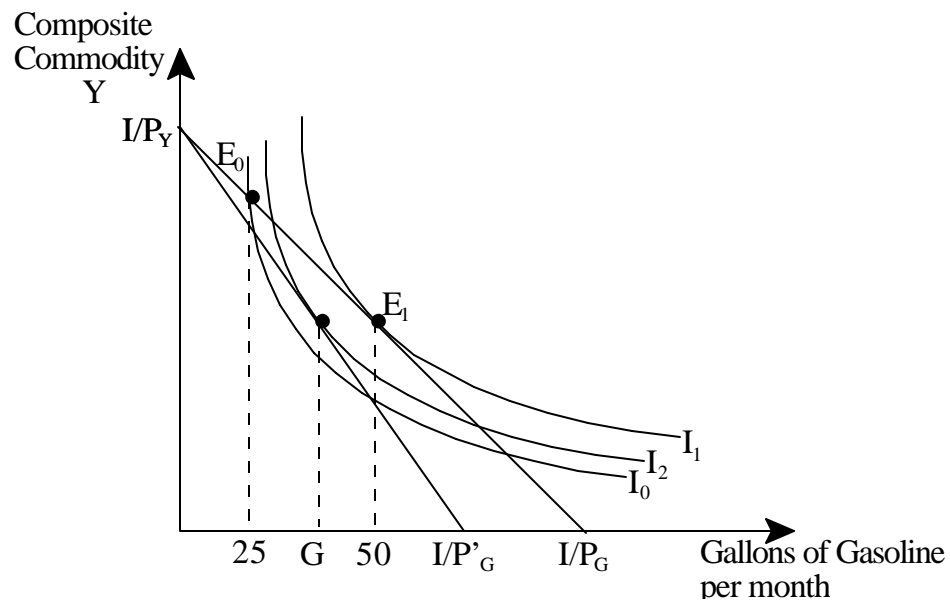
- (b) Use indifference curves to show which consumers will be made better off by the price change in part a.
- (c) Use indifference curves to show which consumers will be made worse off by the price change in part a.



- (3) Assume that you would like to purchase 50 gallons of gasoline per month at the price of \$1.50 per gallon. However, the \$1.50 price is the result of a government price ceiling, so there is a shortage and you can only get 25 gallons.

(a) Show what this situation looks like using indifference curves and the budget line.

The budget constraint is confined to the line $I/P_Y - E_0 - 25$. The initial equilibrium consumption bundle with the existence of a price ceiling and a shortage of gasoline is a corner solution at E_0 , with the individual consuming 25 gallons of gasoline. Note that at the equilibrium, the $MRS > P_G/P_Y$. The consumer would be better off consuming more gasoline but cannot because of the shortage.

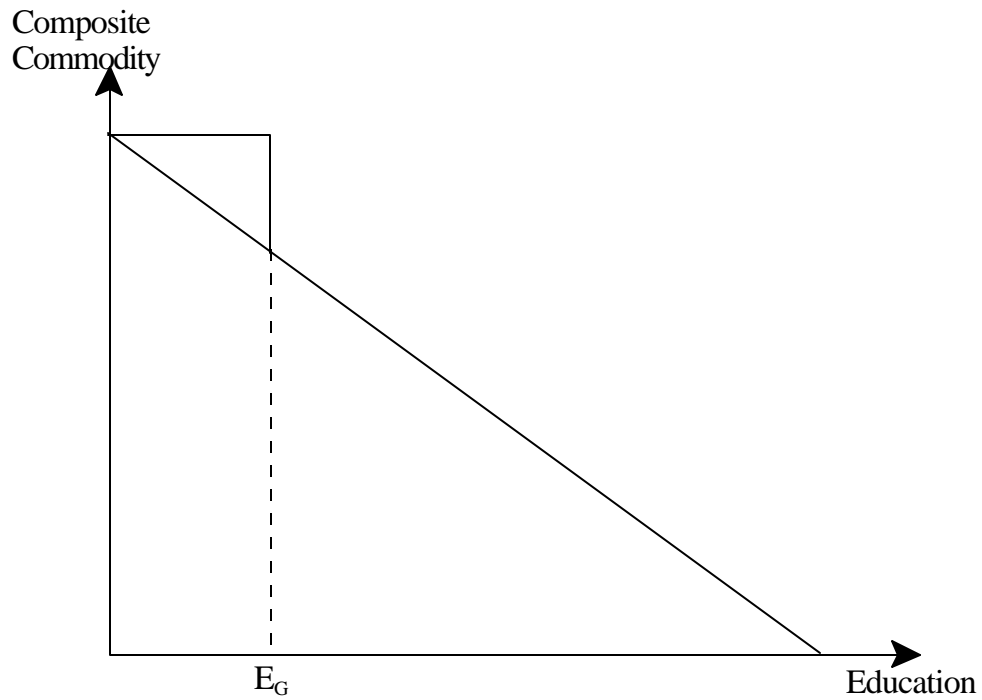


(b) Show that you would be willing to pay a price higher than \$1.50 to get additional units of gasoline.

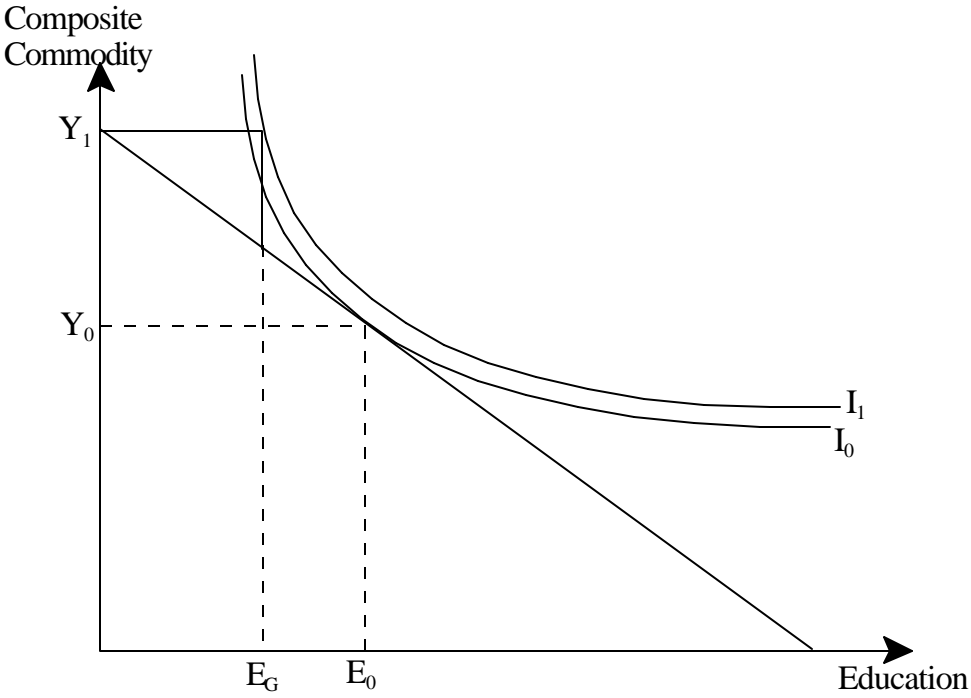
In the absence of a price ceiling, as the price of gasoline increased, $P'_G > P_G$, the budget constraint pivots inward. The consumer would increase their purchase to gasoline to $G > 25$.

(4) In order to encourage the consumption of schooling, the government provides a fixed quantity subsidy of schooling (k-12) at no direct cost to parents.

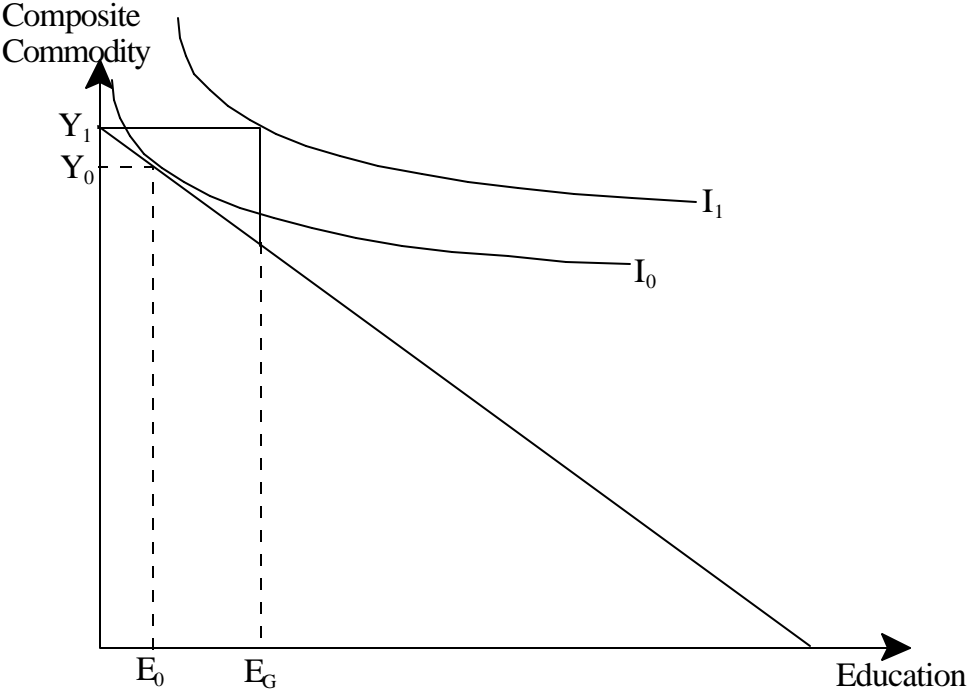
(a) Show the effects of publicly provided education on the shape of the budget constraint.



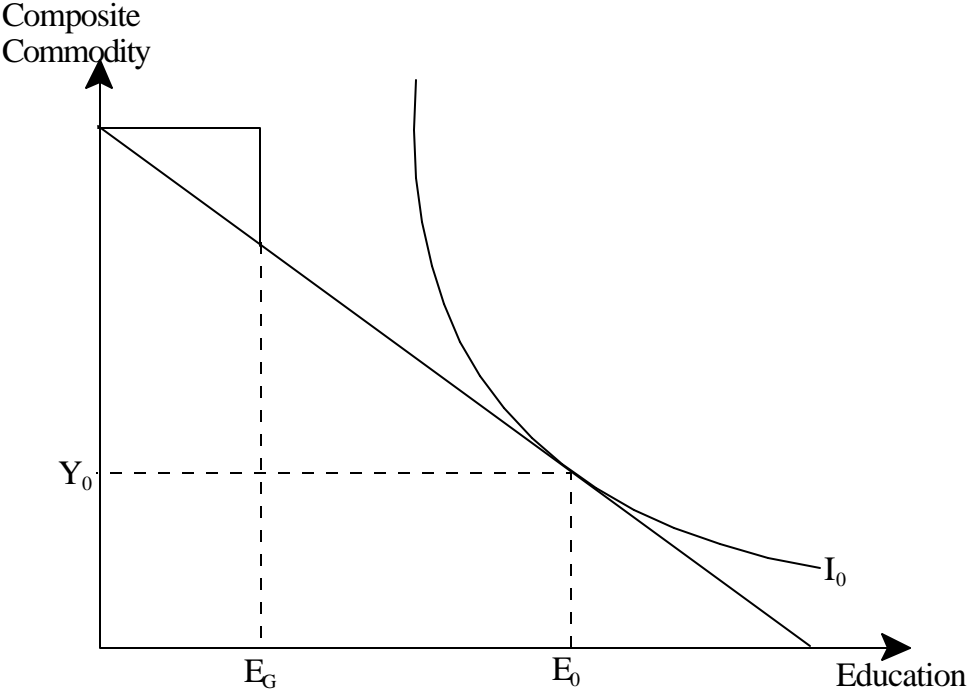
(a) Show how publicly provided education can decrease the consumption of schooling of a utility maximizing consumer. Explain fully and show graphically.



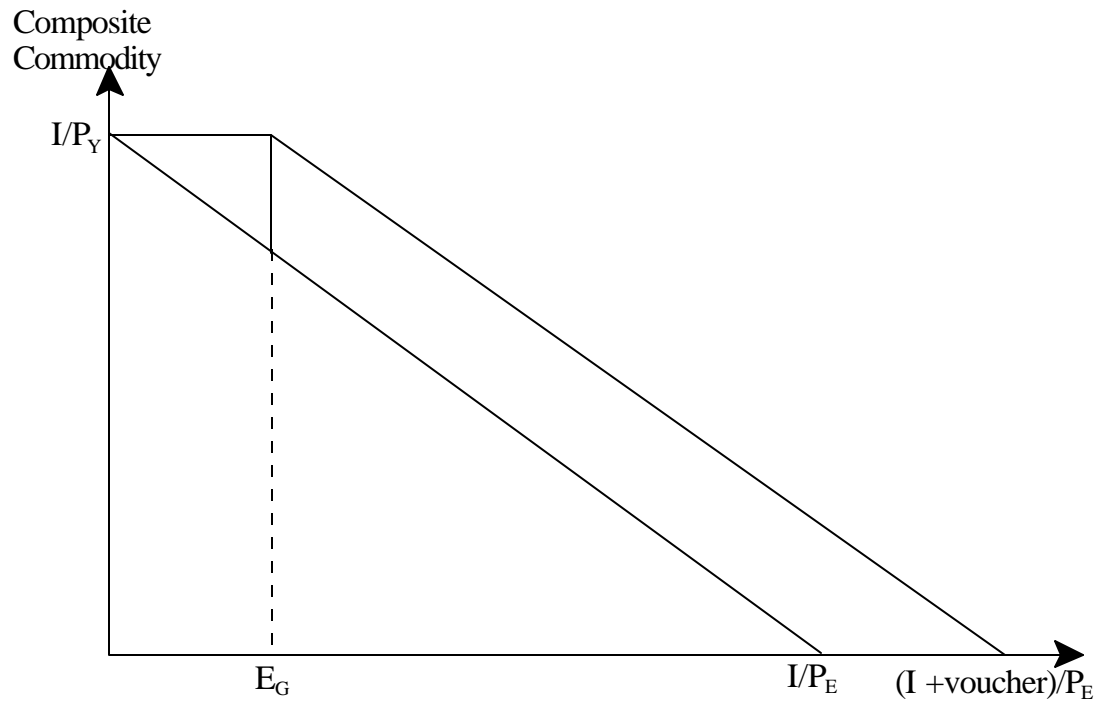
(b) Show how publicly provided education can increase the consumption of schooling of a utility maximizing consumer. Explain fully and show graphically.



(c) Show how publicly provided education can have no effect on the consumption of schooling of a utility maximizing consumer. Explain fully and show graphically.



(d) How would the imposition of a “voucher” system effect the budget constraint?



- (e) How would the imposition of a voucher system effect your answers to b-d? Explain each fully and show each graphically.

