ECON3102-005
Chapter 4: Consumer and Firm Behavior

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- **Consumer's preferences** Consumers preferences over consumption and leisure as represented by indifference curves. The preferences can be captured by the utility function $U(c, l)$.
- A particular combination (c, l) of c and l is called a consumption bundle.

The Representative Consumer's Preferences

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- In fact, the actual level of utility is irrelevant. What matters is the order of preferences implied by the utility function.

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- The consumer likes diversity, i.e. he prefers mixtures to extremes: He would rather have some consumption and some leisure rather than a lot of leisure and no consumption!
- Consumption and leisure are normal goods to the consumer (as opposed to inferior goods!): he consumes more of each as his income goes up.

Indifference Curves (IC curves)

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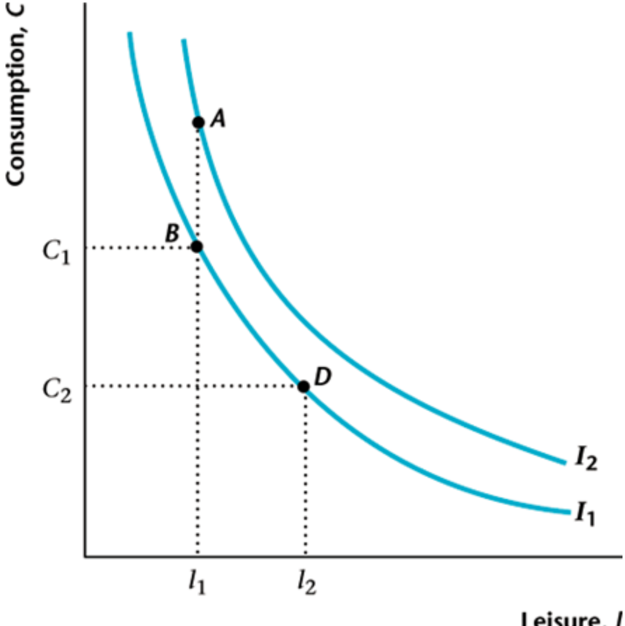
- convex or bowed-in toward the origin (consumer's preferences for diversity).

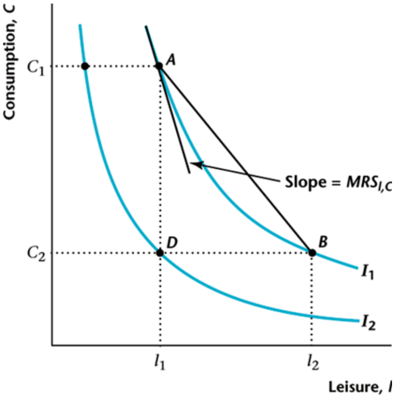
Indifference Curves



Indifference Curves

Definition

The marginal rate of substitution of leisure for consumption, denoted MRS_{lc} , is the rate at which the consumer is just willing to substitute leisure for consumption goods.



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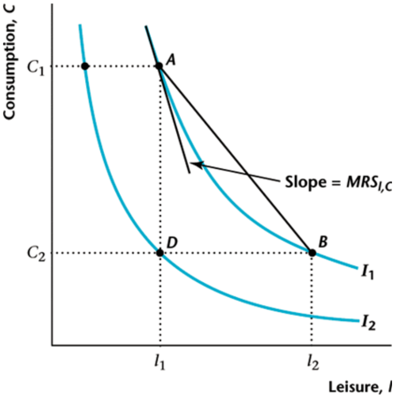

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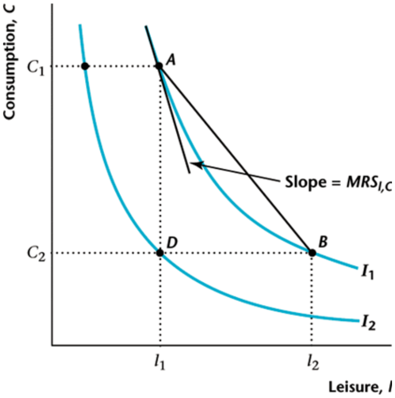

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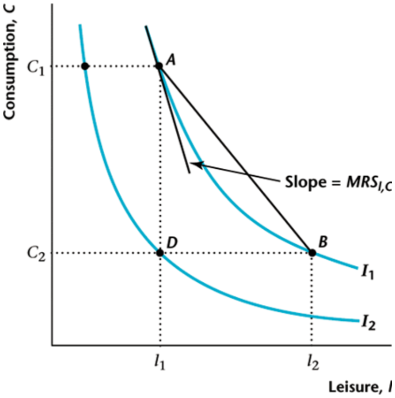

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- This is because if you take away $(c_1 - c_2)$ from him, he would ask to be given $(l_2 - l_1)$ in return, in order to remain indifferent between bundles A and B.
- As bundle B gets arbitrarily close to bundle A, this rate of substitution becomes $\frac{\partial c}{\partial l}$ = - the slope of the line tangent to the IC at point A (the derivative of IC at A).

Indifference Curves

$MRS_{l,c}$ = - the slope of the IC passing through bundle (c, l):

Consumer's Time Constraint

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$$l + N^s = h$$

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- Hence, his disposable income is:

$$wN^s + \pi - T$$

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- or,

$$\underbrace{c + wl}_{\text{Implicit expenditure on goods}} = \underbrace{wh + \pi - T}_{\text{Implicit Real Disposable Income}}$$

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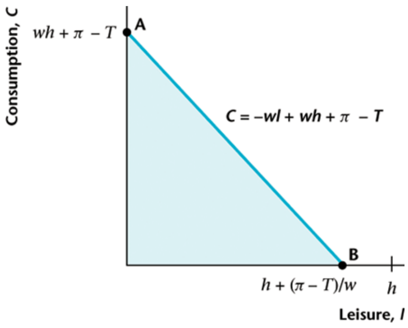
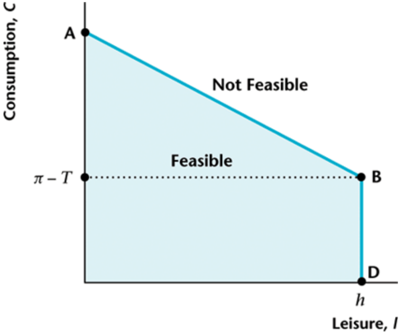
Consumer's Budget Constraint

For convenience, we rewrite the BC as: $c = -wl + wh + \pi - T$



The Consumer's Budget Constraint if $T > \pi$



The Consumer's Budget Constraint if $T < \pi$

Just to show that either case is easy to analyze and that the implications do not change, we will assume in this chapter that $T < \pi$. That is, we will be working with the kinked budget constraint.

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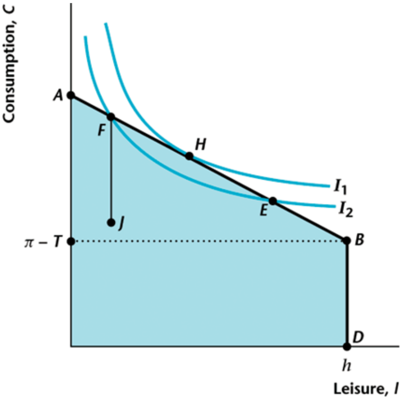
- We next show that the OCB is the point where the IC is tangent to the budget constraint.

Consumer Optimization



- First the consumer will never chose a point inside the budget constraint, so we know the OCB is on line (AB).

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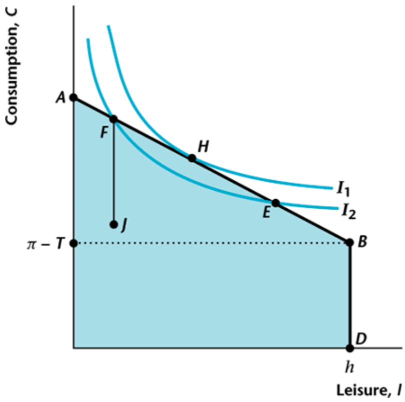

- First the consumer will never chose a point inside the budget constraint, so we know the OCB is on line (AB).
- At point F, -slope of IC ($MRS_{l,c}$) $>$ -slope of the budget constraint ($=w$) : $MRS_{l,c} > w$).

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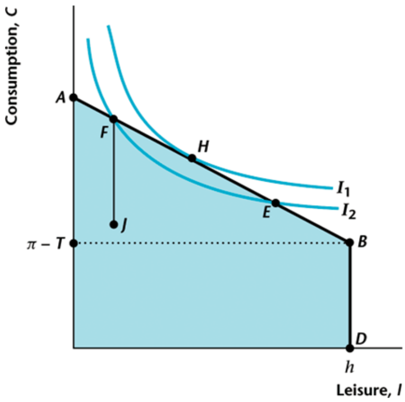

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- Hence, at point F, rate at which the consumer would trade leisure for consumption $>$ the rate at which he can trade leisure for consumption.

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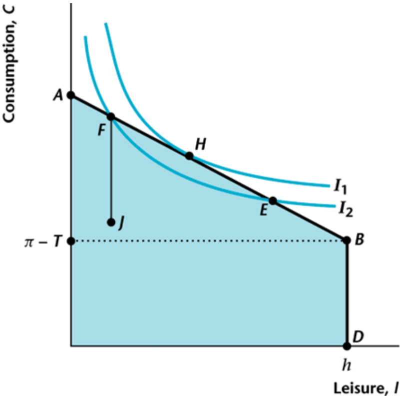

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- Hence, at point F, rate at which the consumer would trade leisure for consumption $>$ the rate at which he can trade leisure for consumption.
- the consumer would then be better off if he sacrifices consumption for more leisure.

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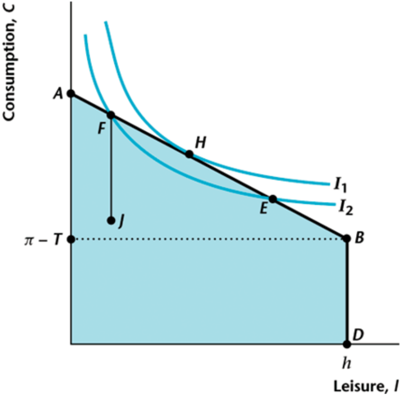

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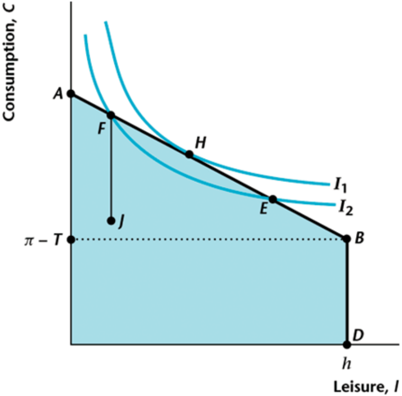

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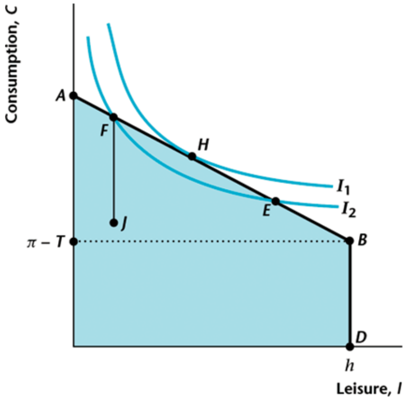

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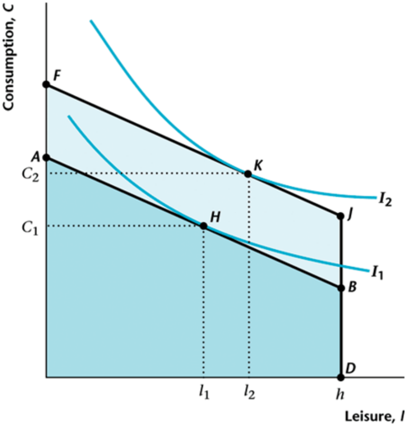
- Hence, the consumer would then be better off sacrificing leisure for more consumption. So, E is not the OCB.
- Hence, the OCB is the point were: $MRS_{l,c} = w$: where the rate at which the consumer would trade consumption for leisure$=$ price of leisure in units of consumption.

An Increase in $\pi - T$ for the Consumer (w is constant.)



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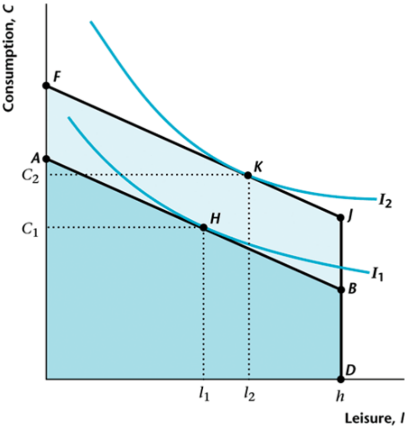

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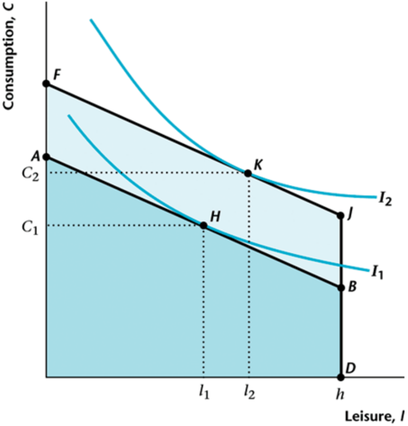

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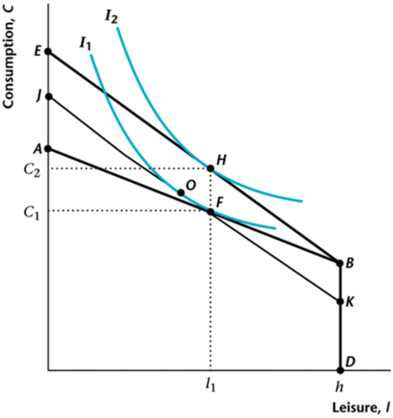
- An increase in dividends or a decrease in taxes will then cause the consumer to increase consumption and reduce the quantity of labor supplied (increase leisure).

An Increase in the Market Real Wage Rate



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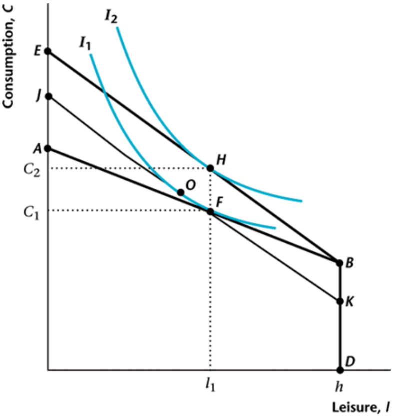

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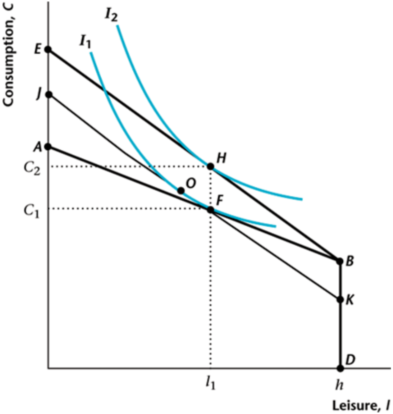

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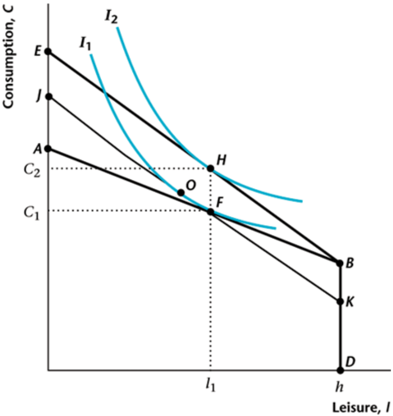

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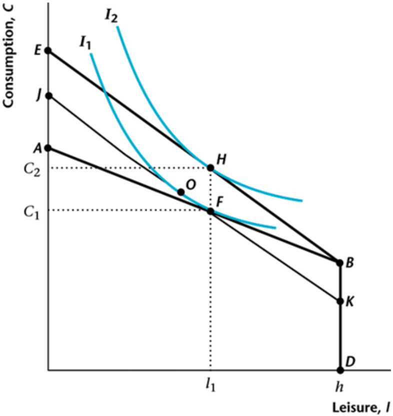
Breaking Down the Income and Substitution Effects



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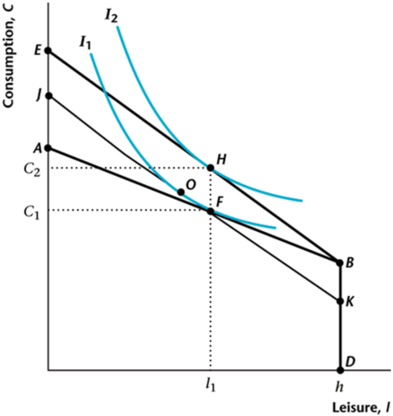

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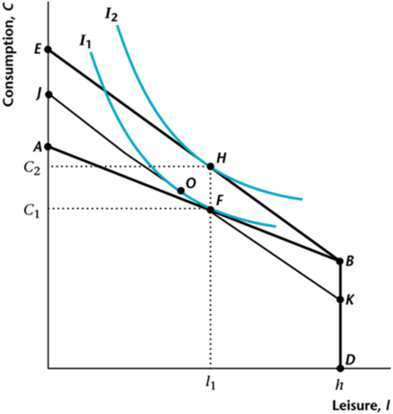

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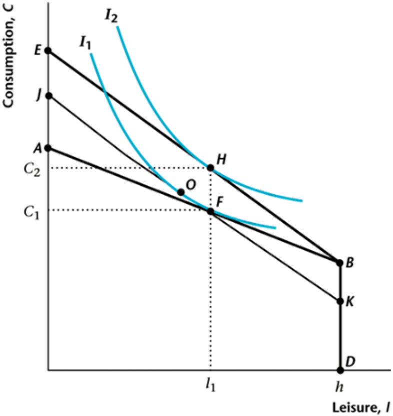

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- As *w* increases, leisure becomes relatively more expensive and the consumer substitutes away from it.

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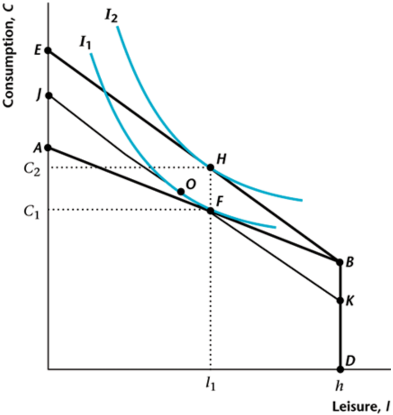

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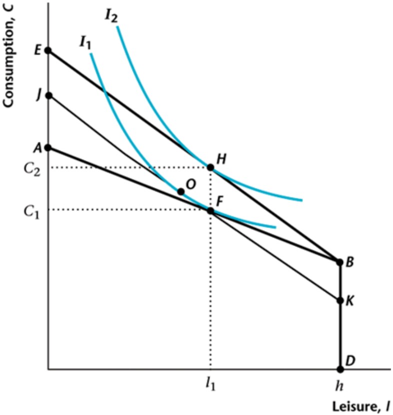

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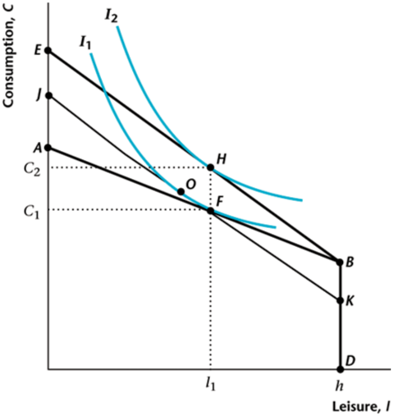

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- Because both goods are normal, the consumer consumes more of both.

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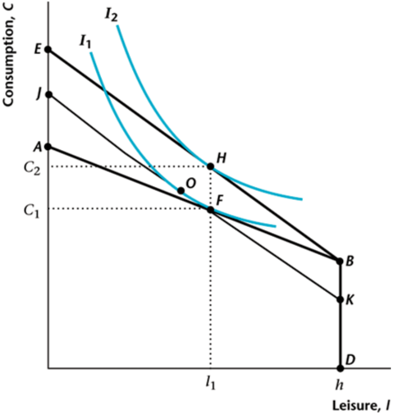

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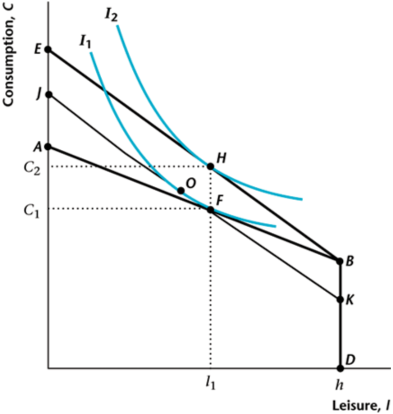

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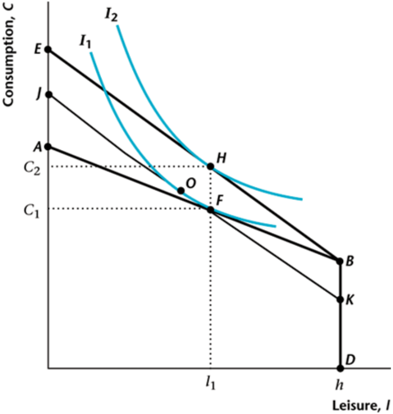

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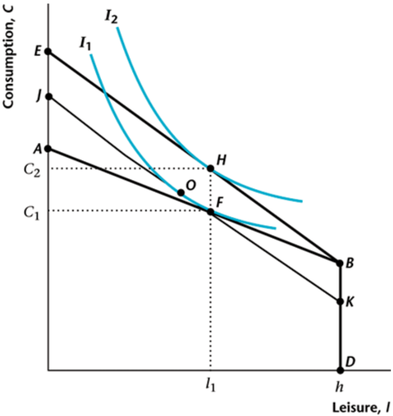

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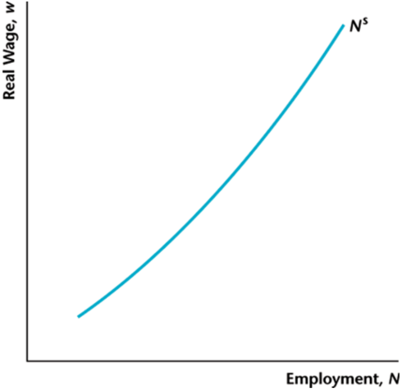
Labor Supply Curve



- We assume that the substitution effect dominates so that as w increases, the consumer consumes less leisure and hence works more.

Labor Supply Curve: Effect of an Increase in Dividend Income or a Decrease in Taxes