Development Economics

Slides 15a

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Endogeneity of the Wealth Distribution

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Endogeneity of the Wealth Distribution

- **We did not take into account the accumulation of wealth**:
  - It will be driven by inequality in the market.
  - People earning low wages are unable to acquire wealth.
  - Wealthy entrepreneurs make high profits, because labor is cheap.
  - So there is a tendency to replicate the starting inequality, high or low.
- **Inequality can beget inequality**:
  - Multiple steady states.
  - See Appendix 3 of the “Inequality and Development” chapter.

Steady States in Occupational Choice

- **Two occupations**, skilled s and unskilled u.
- Wages: w_s and w_u, endogenous.
- Population allocation: (s, u); endogenous, adds to constant total.

Steady States in Occupational Choice

- **Two occupations**, skilled s and unskilled u.
- Wages: w_s and w_u, endogenous.
- Population allocation: (s, u); endogenous, adds to constant total.
- **One parent one child in each generation**.
- Cost of acquiring skilled occupation: X, paid by parent.
- Parent utility:

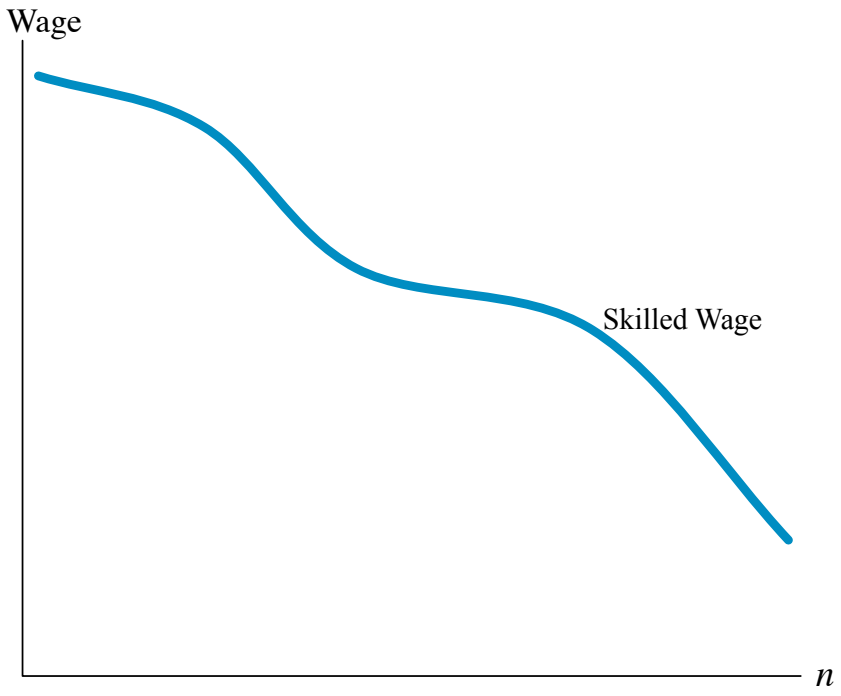
$$\sum_{\tau=t}^{\infty} \delta^{\tau-t} u(c_\tau)$$

Steady States in Occupational Choice

- **Production function:** $F(s,u)$, CRS.
- Skilled wage: marginal product: $w_s = \frac{\partial F}{\partial s}(s,u)$.
- Unskilled wage: marginal product $w_u = \frac{\partial F}{\partial u}(s,u)$.

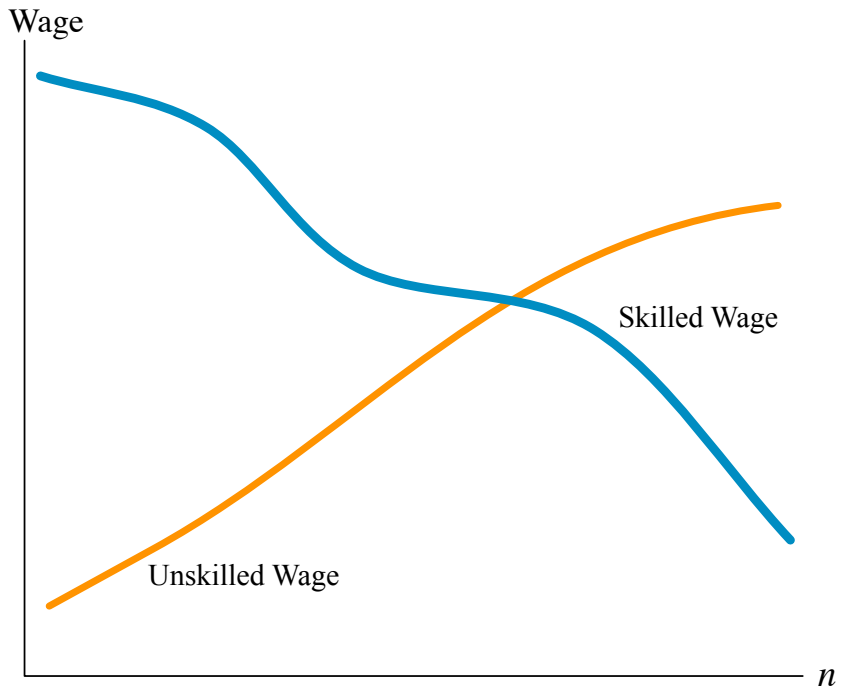
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Steady States in Occupational Choice

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- Wages equal marginal products evaluated at $s = n$ and $u = 1 - n$.

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- A constant fraction n are skilled

- Wages equal marginal products evaluated at $s = n$ and $u = 1 - n$.

- All parents keep replicating their skill status in their children.

- **Conditions for n to be a steady state:**

[Skilled parent] $$\frac{u(w_s - X)}{1-\delta} \geq u(w_s) + \frac{\delta}{1-\delta} u(w_u)$$

[Unskilled parent] $$\frac{u(w_u)}{1-\delta} \geq u(w_u - X) + \frac{\delta}{1-\delta} u(w_s - X)$$

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Theorem 1

Every n with

$$\underbrace{u(w_u) - u(w_u - X)}_{\text{Unskilled Cost}} \geq \underbrace{\frac{\delta}{1-\delta}\left[u(w_s - X) - u(w_u)\right]}_{\text{Future Benefit}} \geq \underbrace{u(w_s) - u(w_s - X)}_{\text{Skilled Cost}}$$

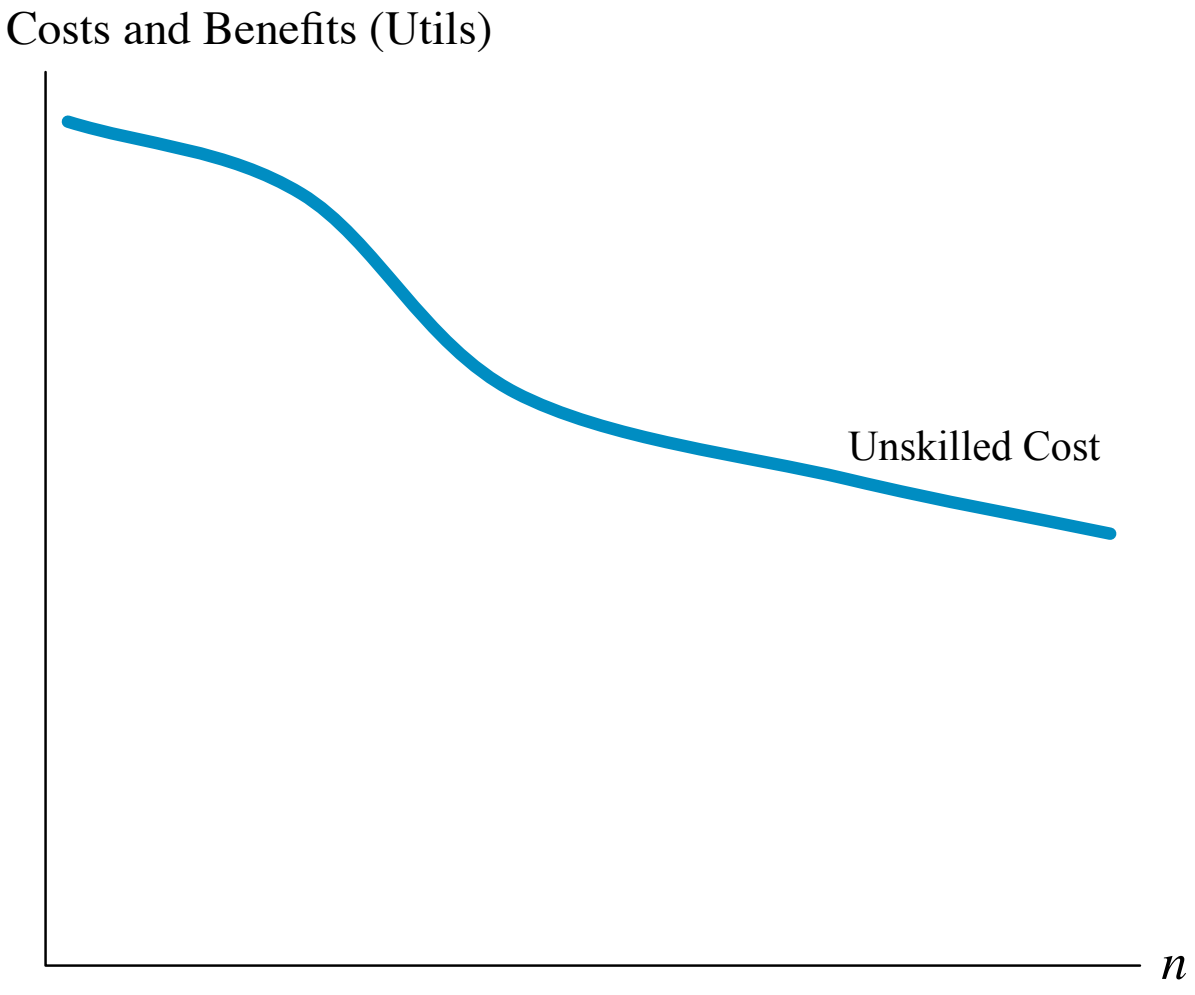
and wages equal to marginal products — that is, $w_s = \frac{\partial F}{\partial s}(n, 1-n)$ and $w_u = \frac{\partial F}{\partial u}(n, 1-n)$ — must be a steady state.

Steady States in Occupational Choice

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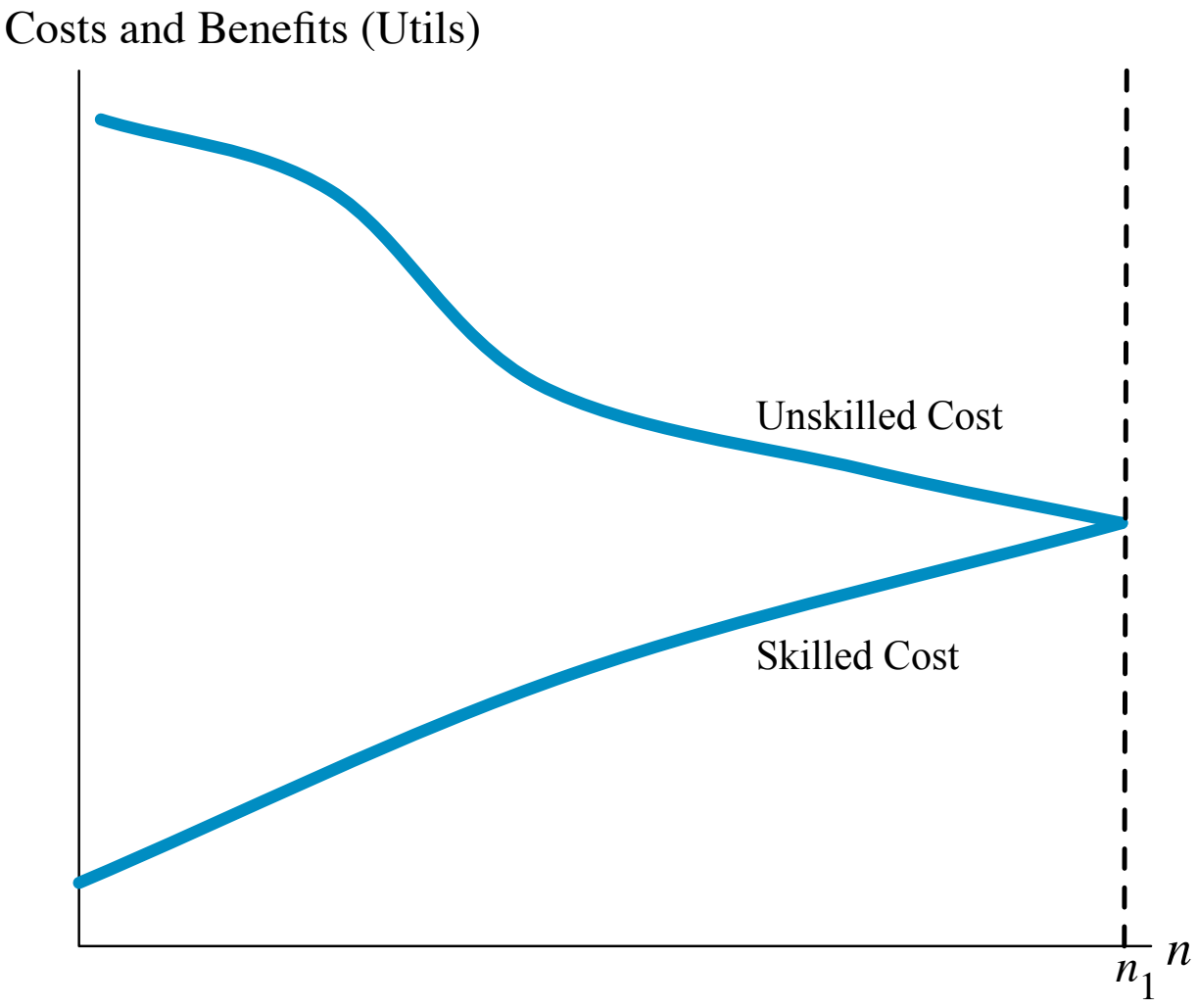
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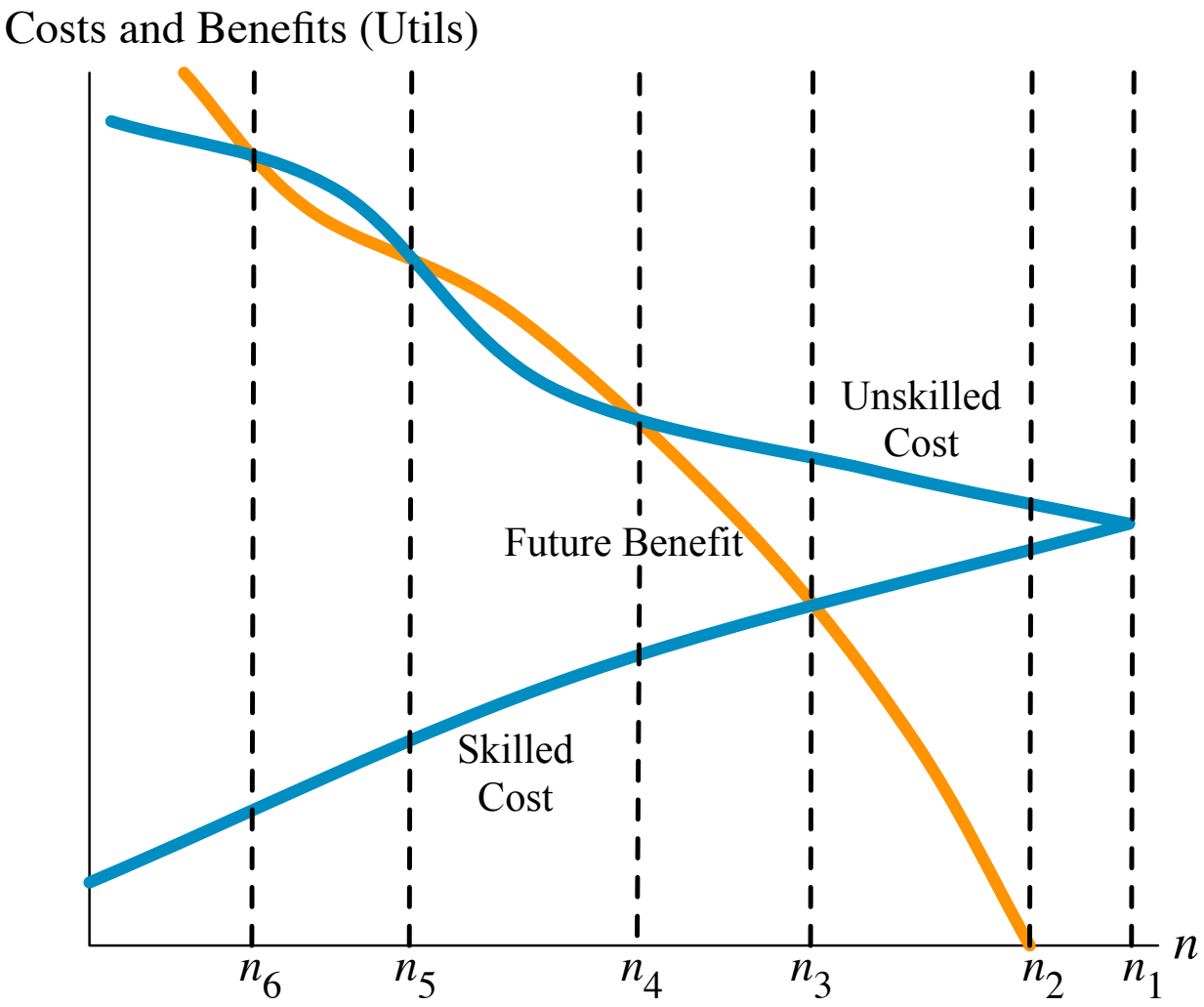
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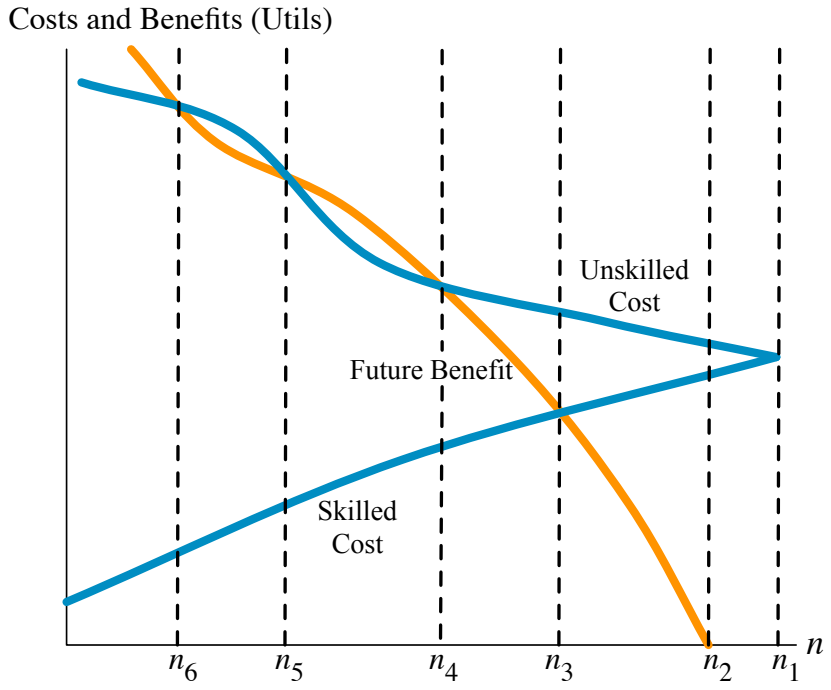


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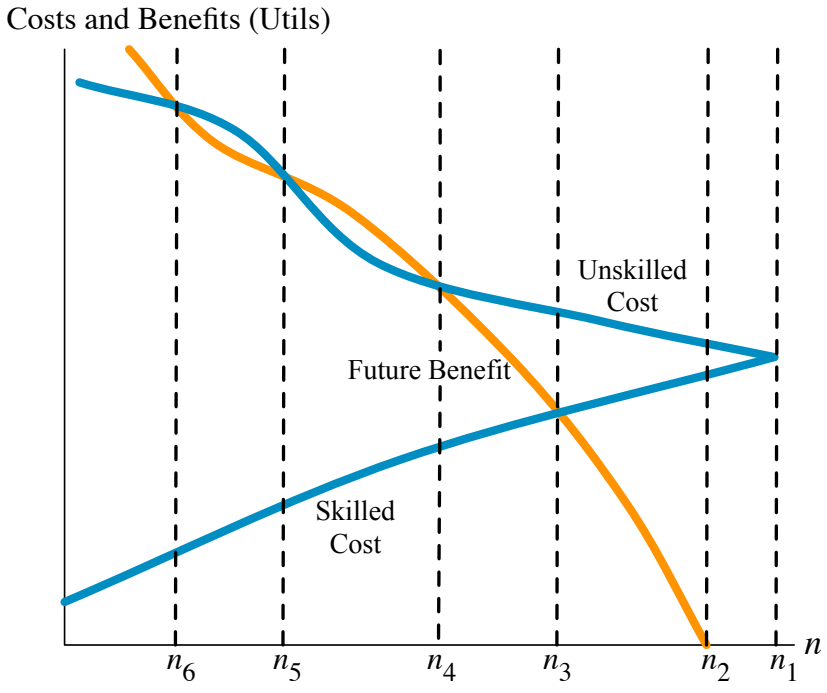


Steady States in Occupational Choice



- **Some Observations:**

Steady States in Occupational Choice



- **Some Observations:**

1. Steady states exist. The first one (from right to left) is at n_3.

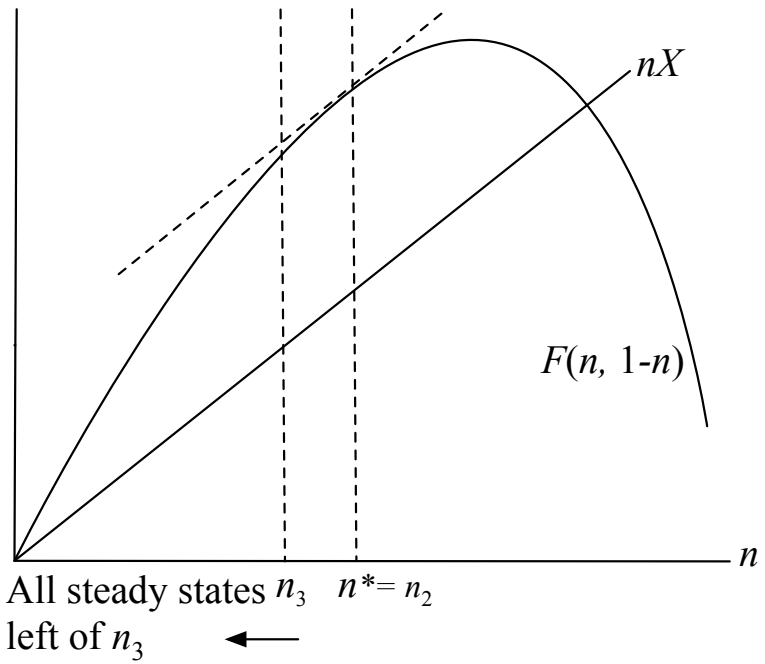
2. There are many steady states — an infinity of them.

3. *Every* steady state displays persistent inequality.

Steady States in Occupational Choice

4. Every steady state is inefficient.

- Efficient allocation maximizes $F(n, 1-n) - nX$:



$F_1(n^*, 1-n^*) - F_2(n^*, 1-n^*) = X, \Rightarrow w_s^* - X = w_u^* \Rightarrow n^* = n_2$. But every steady state is to the left of n_3 (see steady state diagram).

Steady States in Occupational Choice

5. The entrepreneurship model can be easily embedded here.

- Reinterpret s as entrepreneur, u as worker.
- $X = S(1+r)$ is setup cost.
- $F(s,u) = sf\left(\frac{u}{s}\right)$

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- Reinterpret s as entrepreneur, u as worker.
- $X = S(1+r)$ is setup cost.
- $F(s,u) = sf\left(\frac{u}{s}\right)$
- Then:
- $F_2(s,u) = f'\left(\frac{u}{s}\right) = w$, and
- $F_1(s,u) = f\left(\frac{u}{s}\right) - \frac{u}{s}f'\left(\frac{u}{s}\right) = f\left(\frac{u}{s}\right) - \frac{u}{s}w$ = profit.