Development Economics

Slides 7

Debraj Ray, NYU

A Core Framework

- **Two sectors:** a ("archaic") and m ("modern").
- Labor allocation: L_a and L_m from common pool L, so

$$L_a(t) + L_m(t) \leq L.$$

A Core Framework

- **Two sectors:** a ("archaic") and m ("modern").
- Labor allocation: L_a and L_m from common pool L, so

$$L_a(t) + L_m(t) \leq L.$$

- One production function for each sector:

$$Y_a = A(K_a, L_a) \text{ and } Y_m = M(K_m, L_m)$$

where K_a is archaic capital (or land), K_m is modern capital (or machinery).

A Core Framework

- **Two sectors:** a ("archaic") and m ("modern").
- Labor allocation: L_a and L_m from common pool L, so

$$L_a(t) + L_m(t) \leq L.$$

- One production function for each sector:

$$Y_a = A(K_a, L_a) \text{ and } Y_m = M(K_m, L_m)$$

where K_a is archaic capital (or land), K_m is modern capital (or machinery).

- Special Cobb-Douglas form:

$$Y_a = AK_a^{\alpha} L_a^{1-\alpha} \text{ and } Y_m = MK_m^{\mu} L_m^{1-\mu},$$

where A and M measure archaic and modern TFP.

Prices and Work Subsistence

- **Prices:**

- sectoral wages w_a and w_m;

- price of m-good p (the a-good is the numeraire).

Prices and Work Subsistence

- **Prices:**
  - sectoral wages w_a and w_m;
  - price of m-good p (the a-good is the numeraire).
- **Work Subsistence:**
  - Reservation wage, basic needs
  - Call this z; then $w_a \geq z$ and $w_m \geq z$.
  - Different from survival subsistence, which we normalize to 0.

Labor Demands

- Each sector has own demands for labor, depending on:
- capital endowments K_a and K_m;
- sectoral wages and price: (w_a, w_m, p).

Labor Demands

- Each sector has own demands for labor, depending on:
- capital endowments K_a and K_m;
- sectoral wages and price: (w_a, w_m, p).
- E.g., in Cobb-Douglas case, m-sector capitalists will choose L_m to maximize

$$pY_m - w_m L_m = pMK_m^{\mu} L_m^{1-\mu} - w_m L_m.$$

Labor Demands

- Each sector has own demands for labor, depending on:
- capital endowments K_a and K_m;
- sectoral wages and price: (w_a, w_m, p).
- E.g., in Cobb-Douglas case, m-sector capitalists will choose L_m to maximize

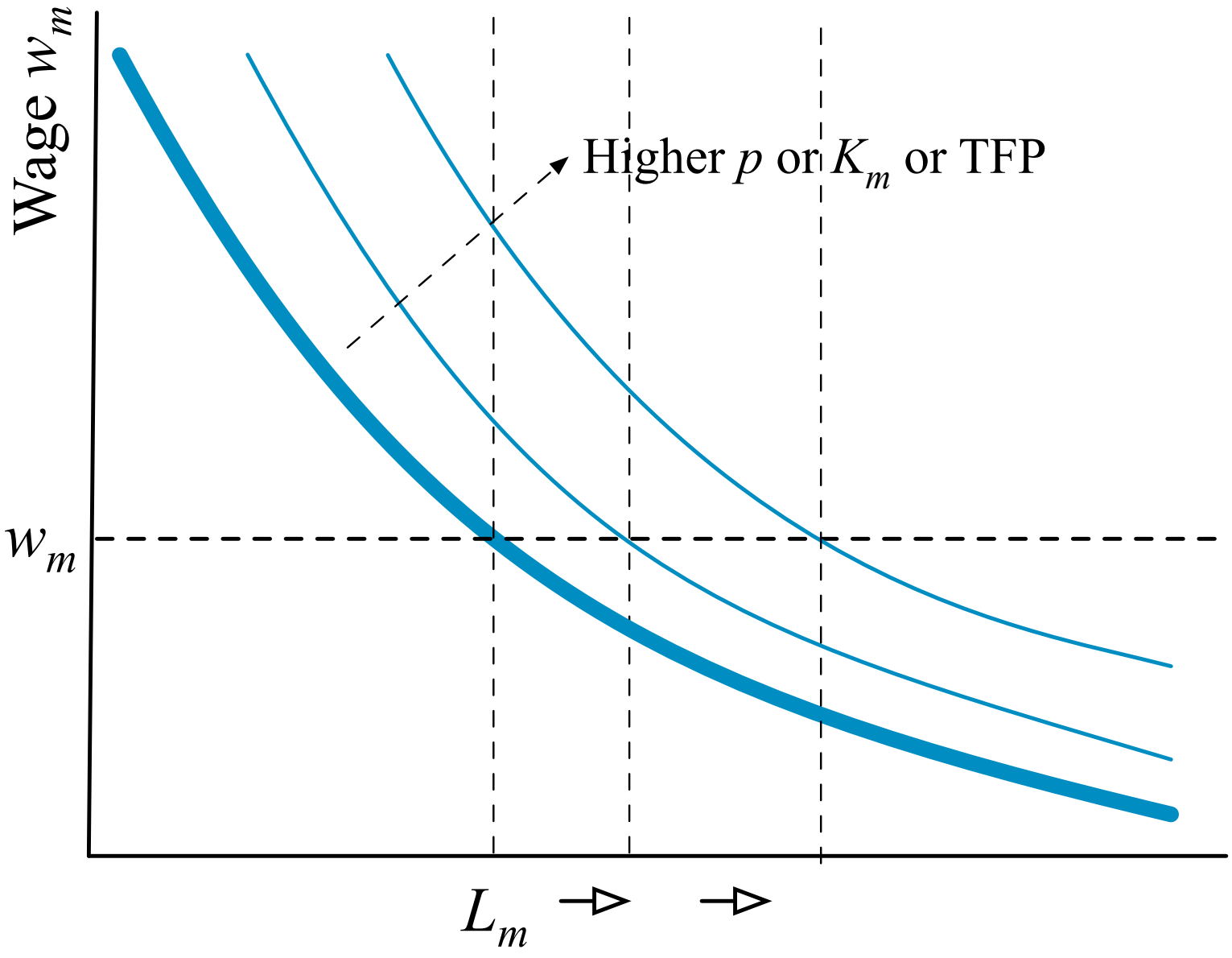
$$pY_m - w_m L_m = pMK_m^{\mu} L_m^{1-\mu} - w_m L_m.$$

- First order condition: $p(1-\mu)MK_m^{\mu} L_m^{-\mu} = w_m$, or

$$L_m = \left[\frac{p(1-\mu)M}{w_m}\right]^{1/\mu} K_m.$$

- This gives us the labor demand curve.

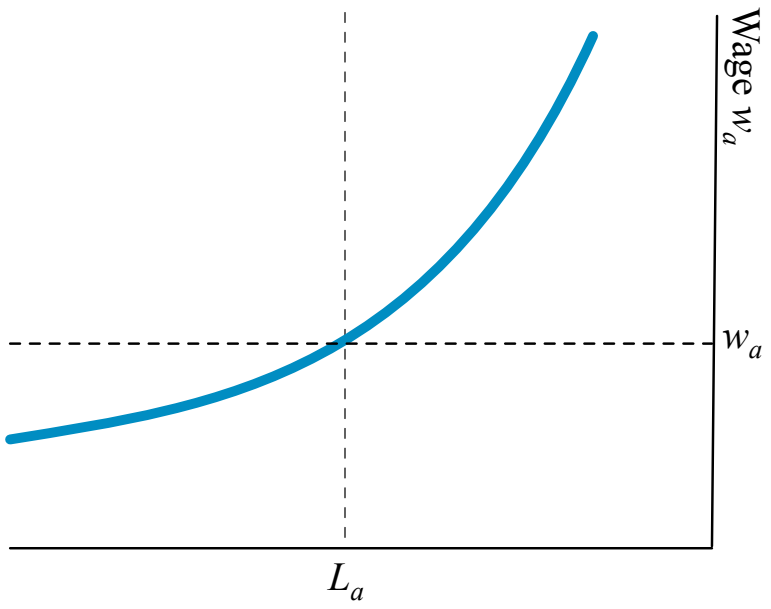
Labor Demands



Labor Demands

- Likewise for the a-sector, if it is also capitalistic.

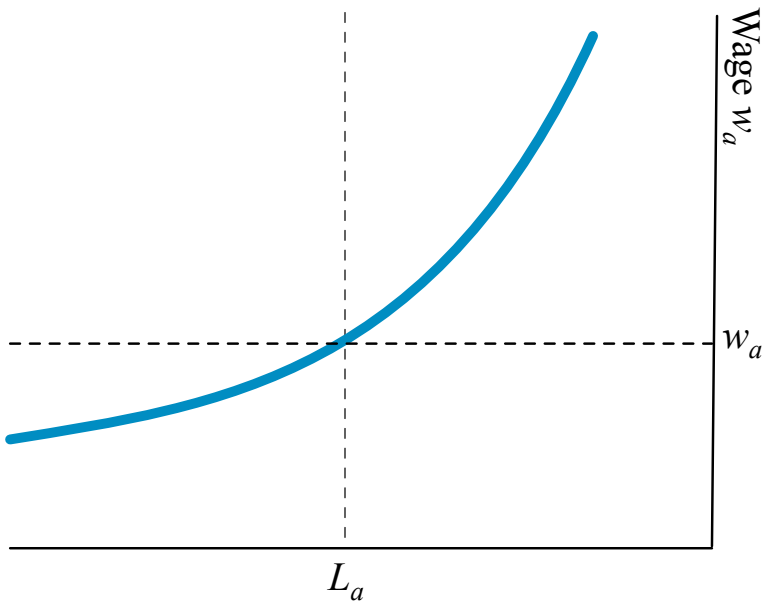
$$L_a = \left[\frac{(1-\alpha)A}{w_a}\right]^{1/\alpha} K_a.$$



Labor Demands

- Likewise for the a-sector, if it is also capitalistic.

$$L_a = \left[\frac{(1-\alpha)A}{w_a}\right]^{1/\alpha} K_a.$$



- Family farm variation: output sharing; then

$$w_a = \frac{Y_a}{L_a} = AK_a^{\alpha} L_a^{-\alpha}.$$

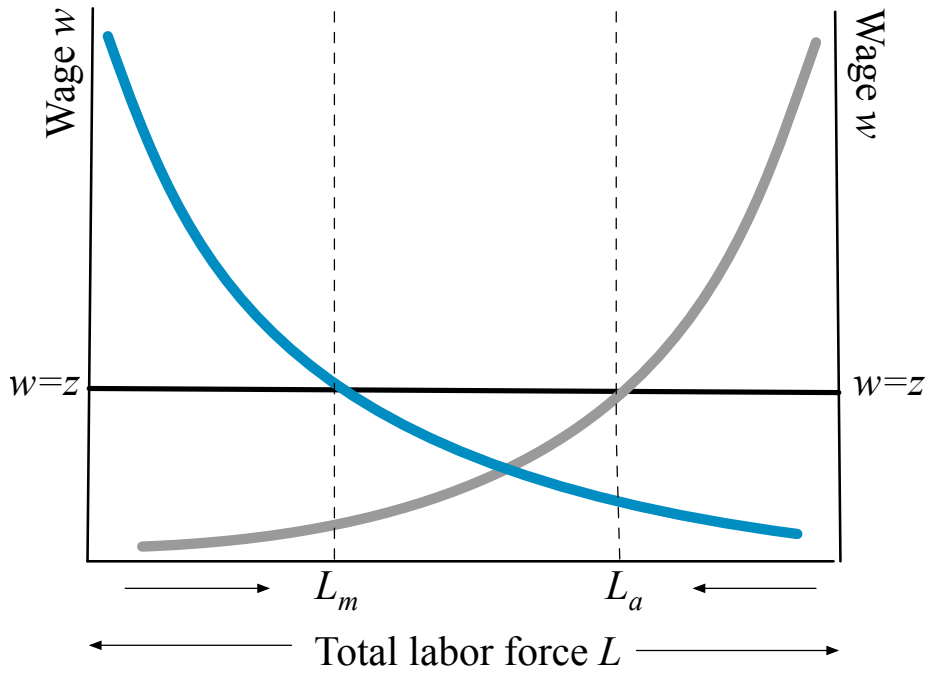
Lewis: Economic Development with Unlimited Supplies of Labor

- **W. Arthur Lewis (1954):** There is an "unlimited supply" of labor to the modern sector at some unchanging wage.

Lewis: Economic Development with Unlimited Supplies of Labor

- **W. Arthur Lewis (1954):** There is an "unlimited supply" of labor to the modern sector at some unchanging wage.

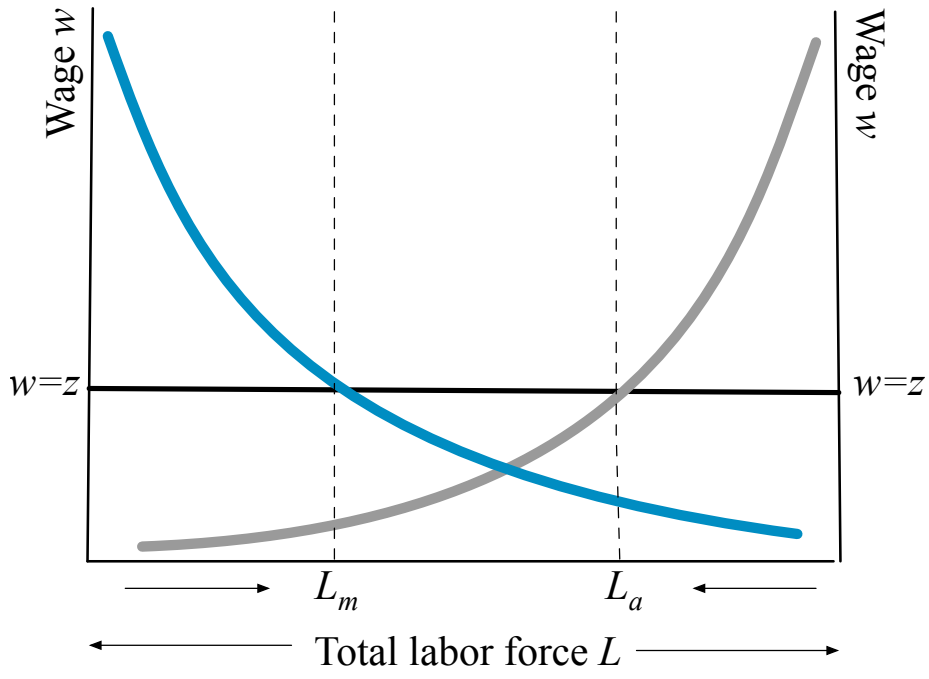
- "An unlimited supply of labor is obviously the relevant assumption for the economies of Egypt, of India, or of Jamaica …occupations usually have a multiple of the number they need, …frequently their number could be halved without reducing output…"



Lewis: Economic Development with Unlimited Supplies of Labor

- **W. Arthur Lewis (1954):** There is an "unlimited supply" of labor to the modern sector at some unchanging wage.

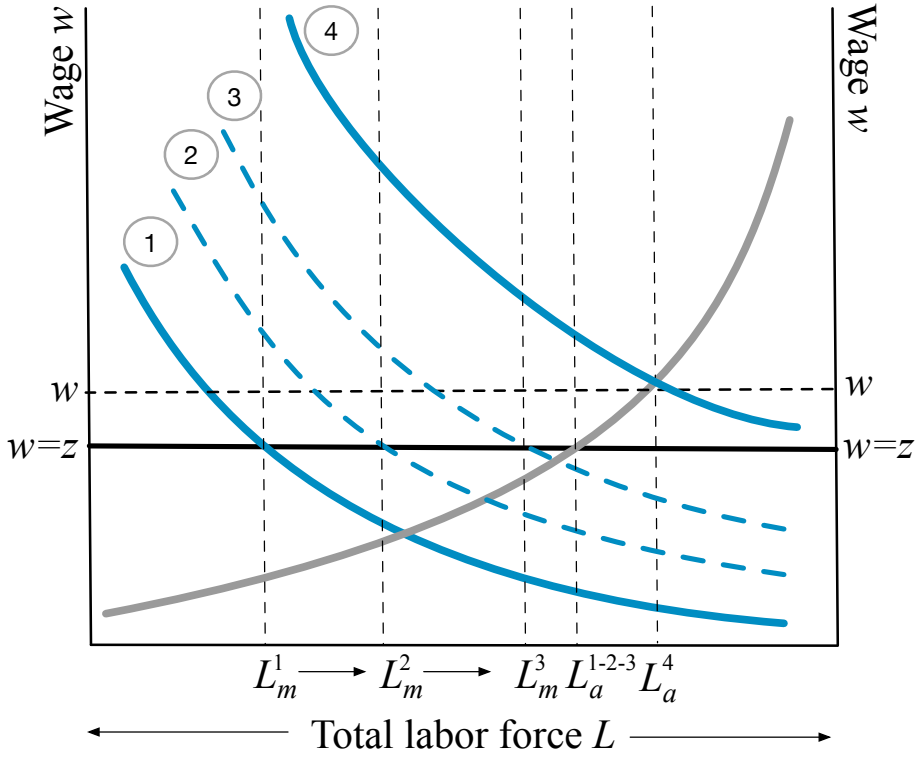
- "An unlimited supply of labor is obviously the relevant assumption for the economies of Egypt, of India, or of Jamaica …occupations usually have a multiple of the number they need, …frequently their number could be halved without reducing output…"



- L large enough so that labor demand cannot absorb that pool, with wages driven down to work subsistence.

Lewis: Economic Development with Unlimited Supplies of Labor

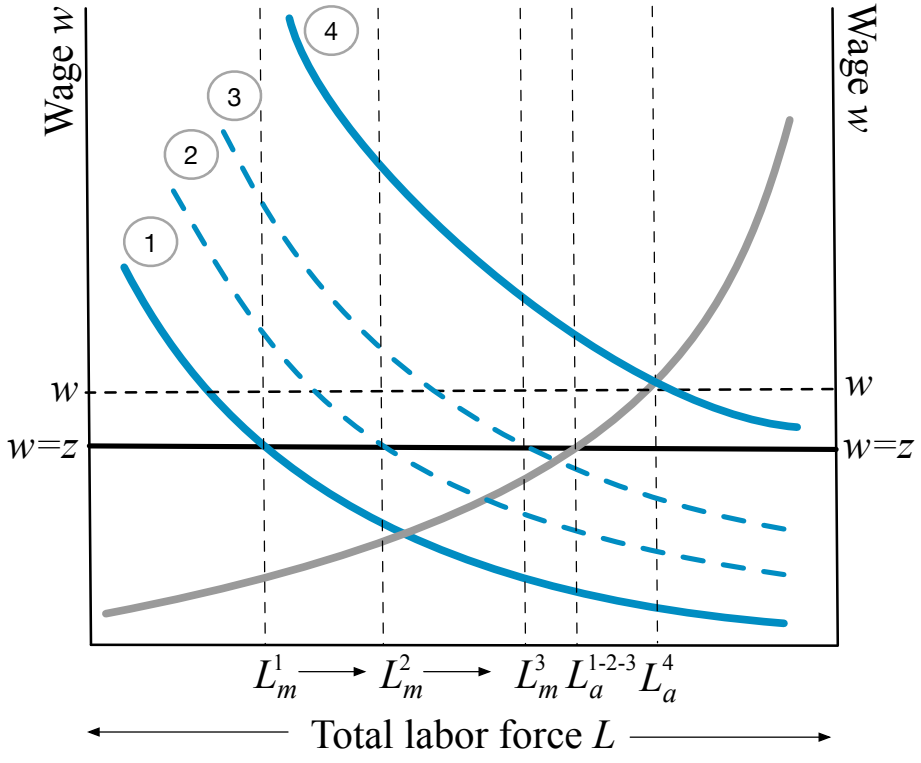
- As K_m expands, $L_m^1 \uparrow L_m^2 \uparrow L_m^3 \ldots$.



Lewis: Economic Development with Unlimited Supplies of Labor

- As K_m expands, $L_m^1 \uparrow L_m^2 \uparrow L_m^3 \ldots$.
- Initially, no upward pressure on w

  (stays at z)

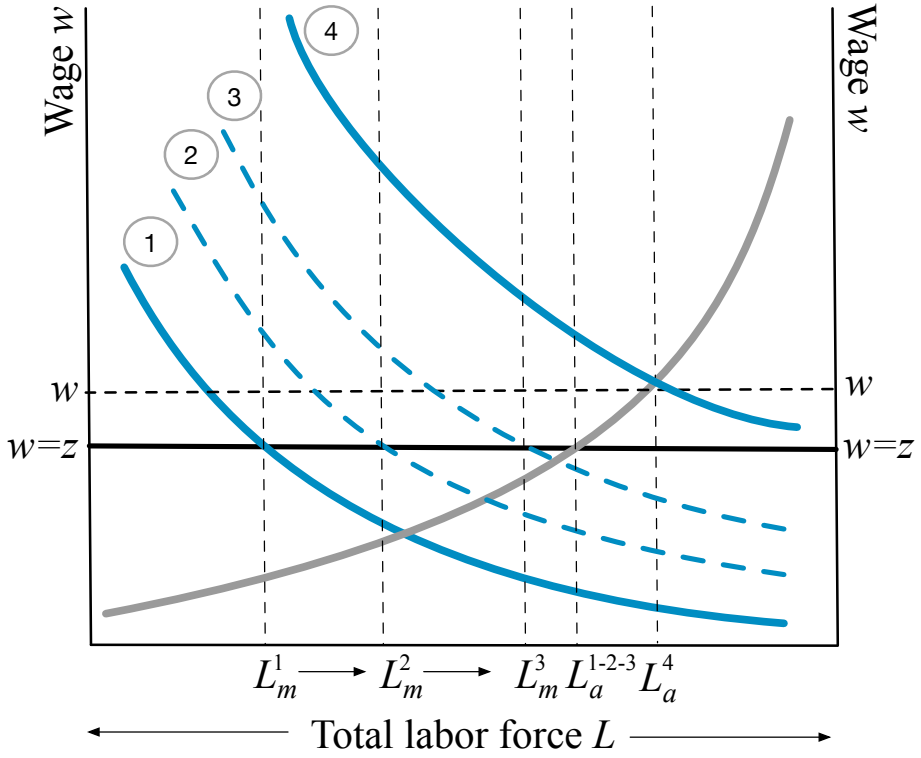


Lewis: Economic Development with Unlimited Supplies of Labor

- As K_m expands, $L_m^1 \uparrow L_m^2 \uparrow L_m^3 \ldots$.
- Initially, no upward pressure on w

  (stays at z)
- Employment $L_a = L_a^{1\text{-}2\text{-}3}$:

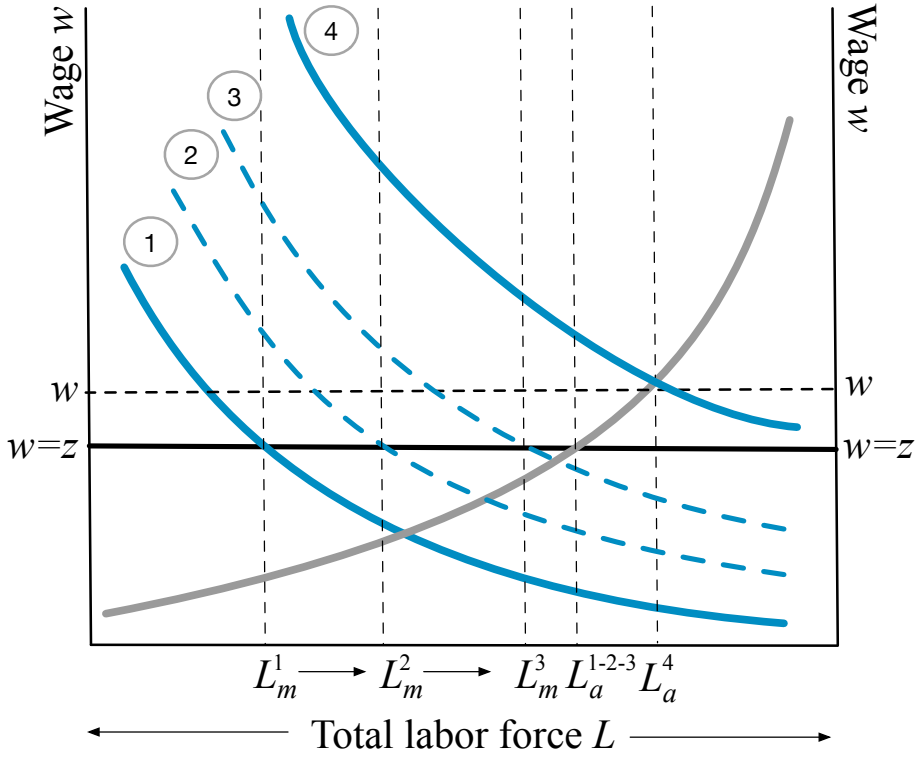
  hence "unlimited supplies of labor."



Lewis: Economic Development with Unlimited Supplies of Labor

- As K_m expands, $L_m^1 \uparrow L_m^2 \uparrow L_m^3 \ldots$.
- Initially, no upward pressure on w (stays at z)
- Employment $L_a = L_a^{1\text{-}2\text{-}3}$: hence "unlimited supplies of labor."
- Later comes a "turning point": w_a starts to climb

  See a point such as L_a^4.



Lewis: Economic Development with Unlimited Supplies of Labor

- So Lewis concentrates his entire perspective on just one goal:

- "The central problem in the theory of economic development is to understand the process by which a community which was previously investing and saving 4 or 5 per cent of its national income or less, converts itself into an economy where voluntary saving is running at about 12 to 15 per cent of national income or more."

Lewis: Economic Development with Unlimited Supplies of Labor

- So Lewis concentrates his entire perspective on just one goal:
- "The central problem in the theory of economic development is to understand the process by which a community which was previously investing and saving 4 or 5 per cent of its national income or less, converts itself into an economy where voluntary saving is running at about 12 to 15 per cent of national income or more."
- For instance, the re-investment of manufacturing profits:

$$\text{Profits} = \max_{L_m}[pF(K_m, L_m) - wL_m] = BK_m,$$

where B depends on parameters (p, w, F). So:

Lewis: Economic Development with Unlimited Supplies of Labor

- So Lewis concentrates his entire perspective on just one goal:
- "The central problem in the theory of economic development is to understand the process by which a community which was previously investing and saving 4 or 5 per cent of its national income or less, converts itself into an economy where voluntary saving is running at about 12 to 15 per cent of national income or more."
- For instance, the re-investment of manufacturing profits:

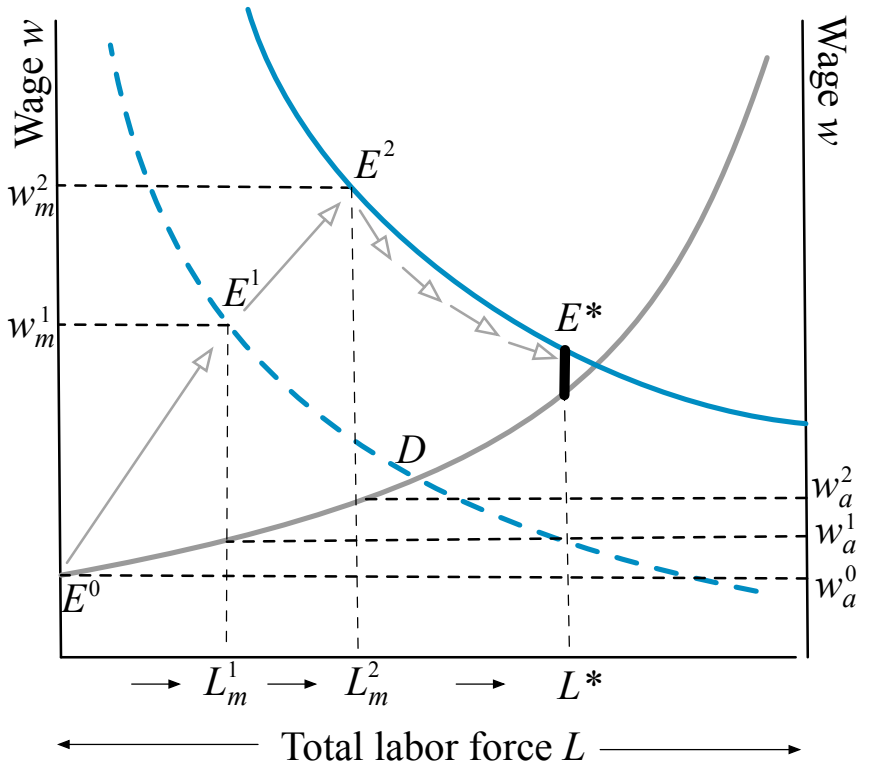
$$\text{Profits} = \max_{L_m}[pF(K_m, L_m) - wL_m] = BK_m,$$

where B depends on parameters (p, w, F). So:

$$K_m(t+1) = (1-\delta)K_m(t) + s\ \text{Profits}\ = (1-\delta)K_m(t) + sBK_m(t)$$

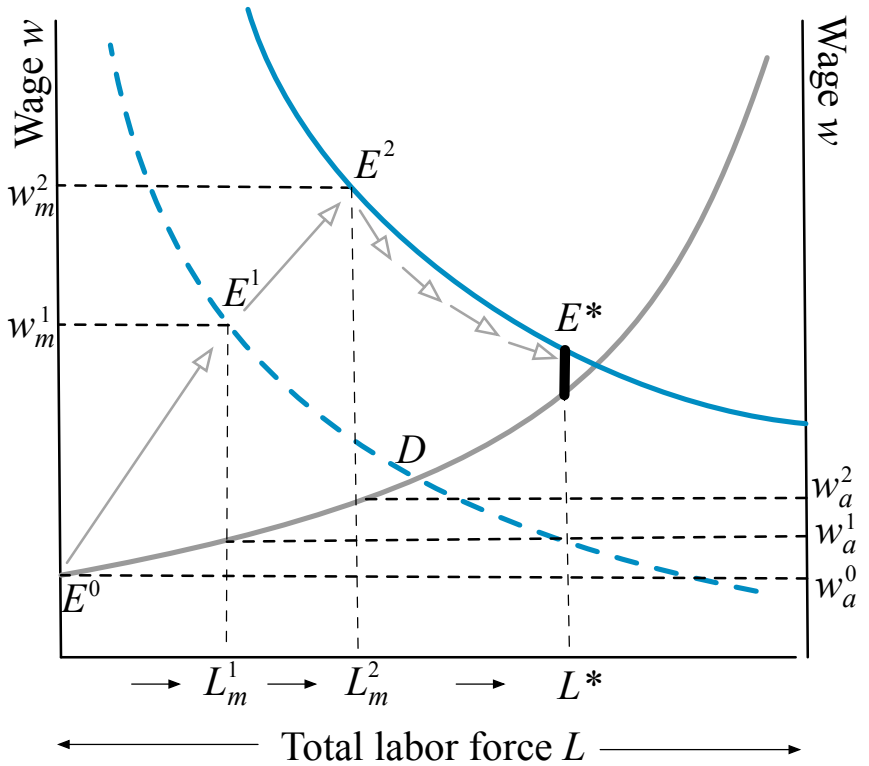
Kuznets: Uneven and Compensatory Changes

- **Kuznets (1955, 1963):**
  - labor to m limited in the short run.
  - Different skill sets



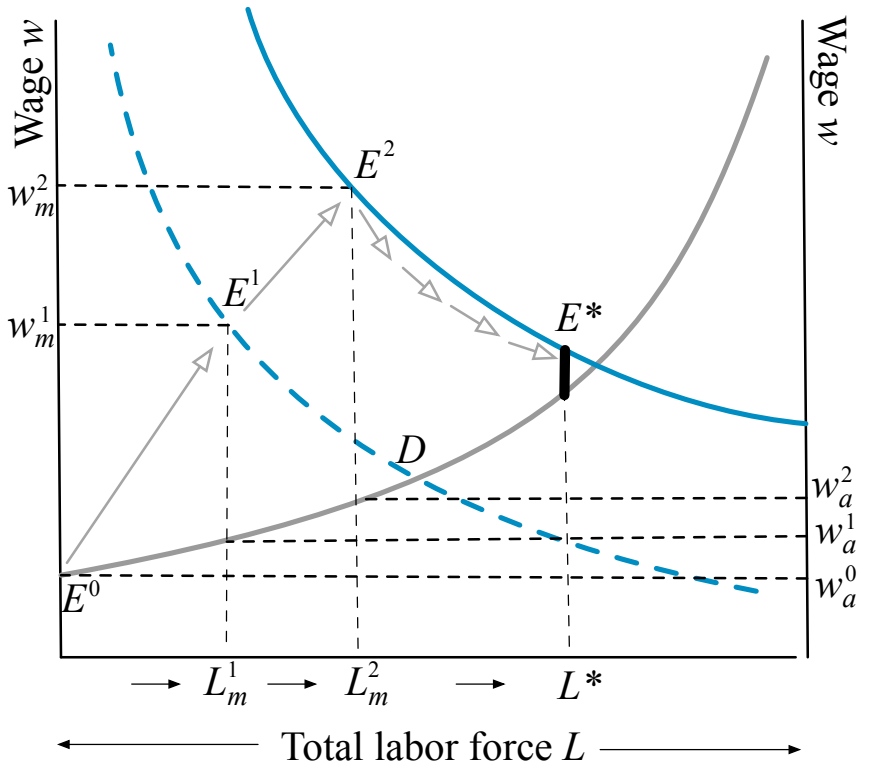
Kuznets: Uneven and Compensatory Changes

- **Kuznets (1955, 1963):**
  - labor to m limited in the short run.
  - Different skill sets
- Disequalizing, uneven changes:
  - then equalizing adjustments.



Kuznets: Uneven and Compensatory Changes

- **Kuznets (1955, 1963):**
  - labor to m limited in the short run.
  - Different skill sets
  - Disequalizing, uneven changes:
  - then equalizing adjustments.
  - Rising, then falling inequality over each Kuznets cycle.



- **Possibly many such cycles**: something Kuznets did not emphasize.

Open and Closed

- In the models so far, p is assumed to be exogenous:

- The economy is **open**, and trade can occur in either good at this relative price.

Open and Closed

- In the models so far, p is assumed to be exogenous:
- The economy is **open**, and trade can occur in either good at this relative price.
- The picture changes when the economy is **closed**.
- Work subsistence involves the consumption of basic goods (“food”).
- Those basics must be domestically produced.

Open and Closed

- In the models so far, p is assumed to be exogenous:
- The economy is **open**, and trade can occur in either good at this relative price.
- The picture changes when the economy is **closed**.
- Work subsistence involves the consumption of basic goods ("food").
- Those basics must be domestically produced.
- The **Kalecki-Rao constraint:**

$$Y_a = z(L_a + L_m), \text{ or equivalently, } L_m = \frac{1}{z}\left[Y_a - zL_a\right]$$

- But L_a and L_m determined by market forces.
- How do those choices line up with the Kalecki-Rao constraint?

Kalecki-Rao: The Basic Needs Constraint

- Here's how we understand an equilibrium:

1. Start with any wage w. (Lewis, not Kuznets, so $w_a = w_m = w$.)

2. Get L_a and Y_a from the labor demand curve in a-sector:

$$L_a = \left[\frac{(1-\alpha)A}{w}\right]^{1/\alpha} K_a \text{ and } Y_a = AK_a^{\alpha} L_a^{1-\alpha}.$$

Kalecki-Rao: The Basic Needs Constraint

- Here's how we understand an equilibrium:

1. Start with any wage w. (Lewis, not Kuznets, so $w_a = w_m = w$.)

2. Get L_a and Y_a from the labor demand curve in a-sector:

$$L_a = \left[\frac{(1-\alpha)A}{w}\right]^{1/\alpha} K_a \text{ and } Y_a = AK_a^{\alpha} L_a^{1-\alpha}.$$

3. Kalecki-Rao pins down L_m:

$$L_m = \frac{1}{z}\left[Y_a - zL_a\right].$$

Kalecki-Rao: The Basic Needs Constraint

- Here's how we understand an equilibrium:

1. Start with any wage w. (Lewis, not Kuznets, so $w_a = w_m = w$.)

2. Get L_a and Y_a from the labor demand curve in a-sector:

$$L_a = \left[\frac{(1-\alpha)A}{w}\right]^{1/\alpha} K_a \text{ and } Y_a = AK_a^{\alpha} L_a^{1-\alpha}.$$

3. Kalecki-Rao pins down L_m:

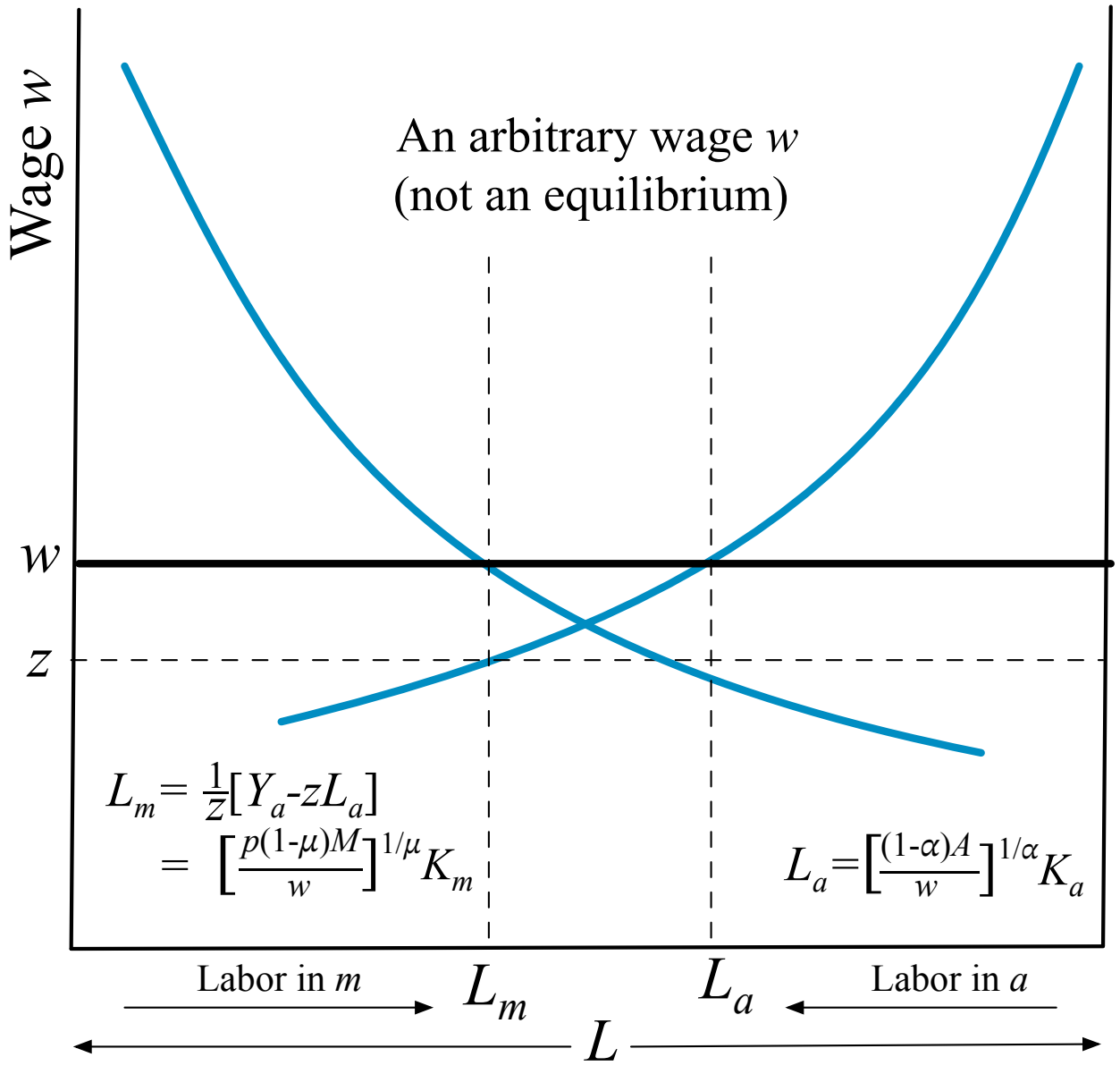
$$L_m = \frac{1}{z}\left[Y_a - zL_a\right].$$

4. But need to reconcile this with profit maximization in m-sector, which yields:

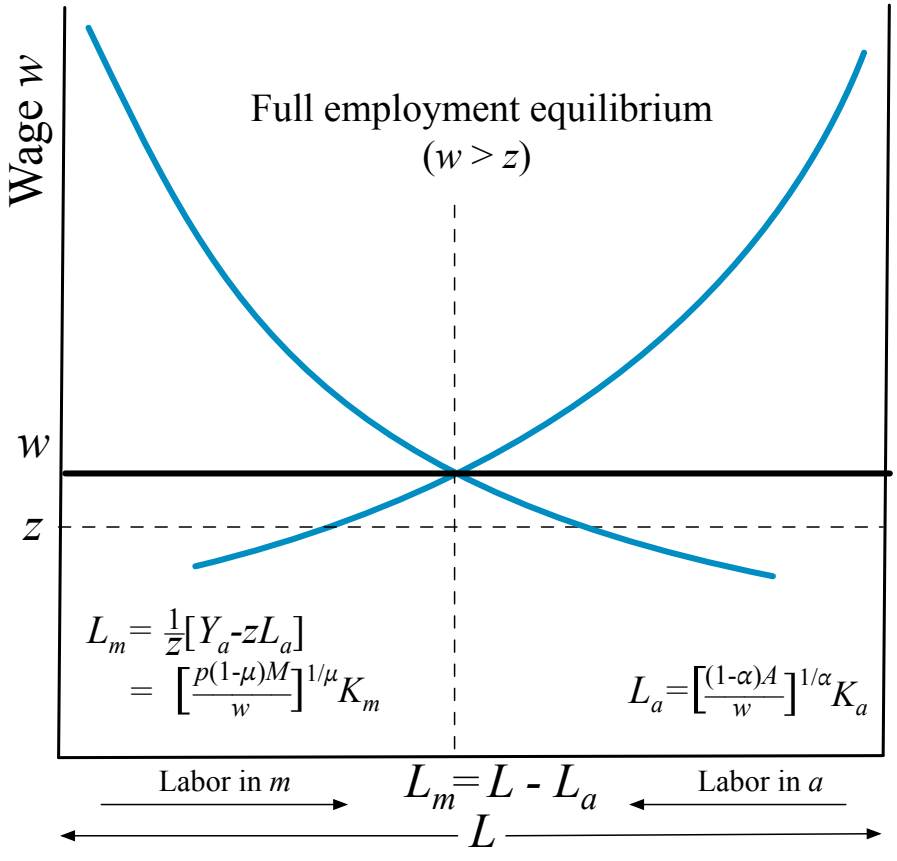
$$\underbrace{\frac{1}{z}\left[Y_a - zL_a\right]}_{\text{Kalecki-Rao}} = L_m = \underbrace{\left[\frac{p(1-\mu)M}{w}\right]^{1/\mu} K_m}_{\text{profit max}}.$$

- p **moves to align K-R with profit-maximization**.

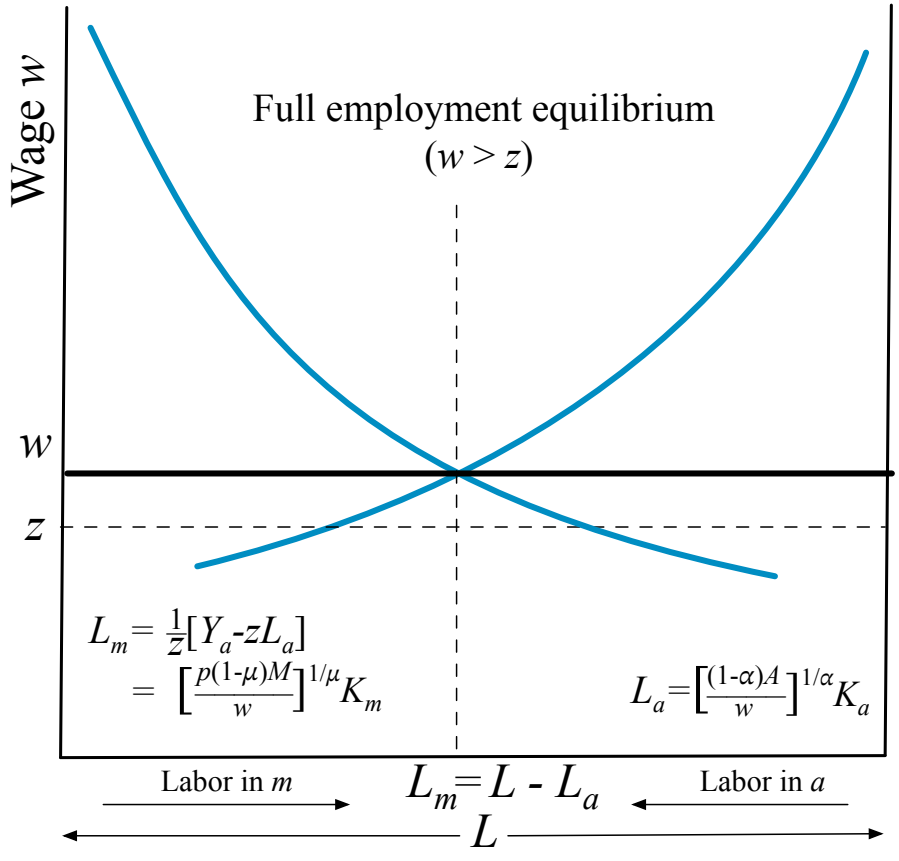
Kalecki-Rao: The Basic Needs Constraint

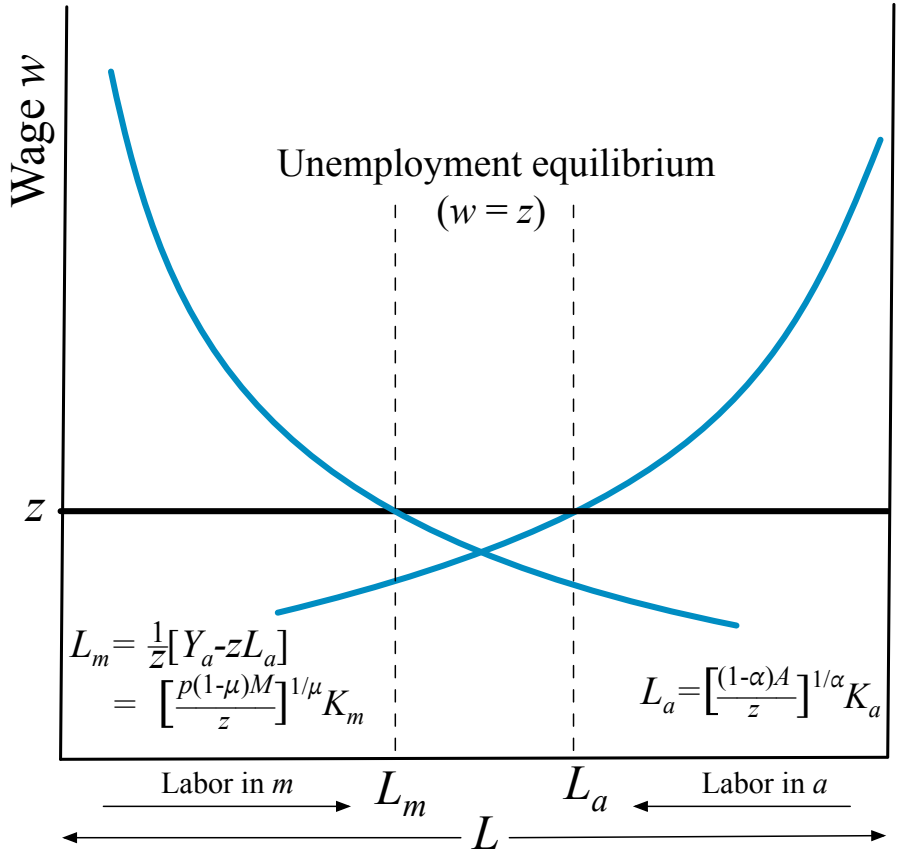


Kalecki-Rao: Two Possible Equilibrium Varieties

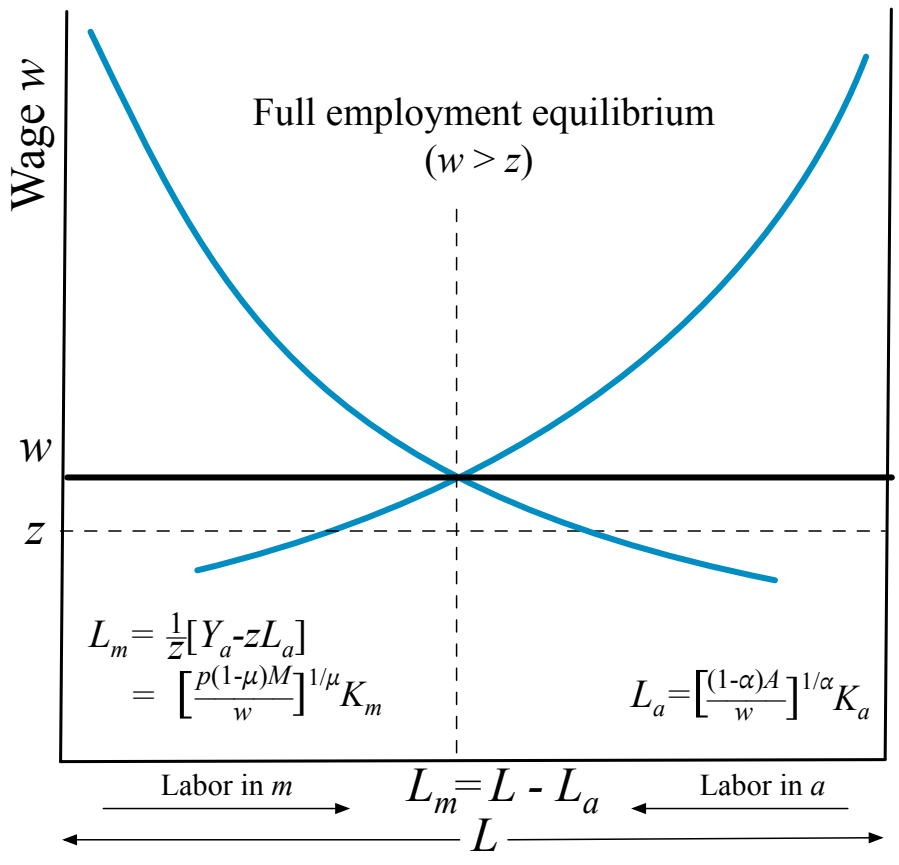


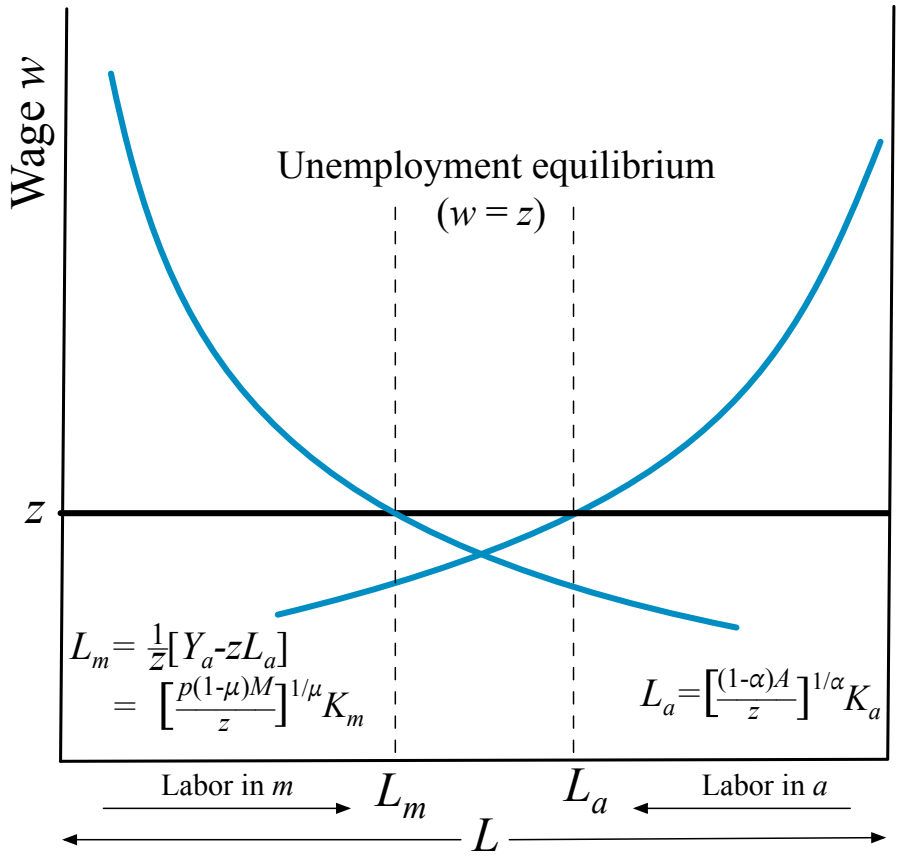
Kalecki-Rao: Two Possible Equilibrium Varieties





Kalecki-Rao: Two Possible Equilibrium Varieties





- Picture on previous slide is not an equilibrium (why?)

Kalecki-Rao: Jobless Modernization

- With Kalecki-Rao, Lewis's "unlimited supplies of labor" breaks down.

Kalecki-Rao: Jobless Modernization

- With Kalecki-Rao, Lewis's "unlimited supplies of labor" breaks down.

- Start in the surplus labor phase, with $L_a + L_m < L$.

Kalecki-Rao: Jobless Modernization

- With Kalecki-Rao, Lewis's "unlimited supplies of labor" breaks down.

- Start in the surplus labor phase, with $L_a + L_m < L$.

- Suppose K_m goes up. In Lewis, L_m goes up in tandem.

- Here, L_m **cannot change at all**

  (because L_a and Y_a are unchanged).

Kalecki-Rao: Jobless Modernization

- With Kalecki-Rao, Lewis's "unlimited supplies of labor" breaks down.
- Start in the surplus labor phase, with $L_a + L_m < L$.
- Suppose K_m goes up. In Lewis, L_m goes up in tandem.
- Here, L_m **cannot change at all**

  (because L_a and Y_a are unchanged).
- This employment stagnation is "implemented" by a lower price p:

$$L_m = \underbrace{\left[\frac{p(1-\mu)M}{w}\right]^{1/\mu} K_m}_{K_m \text{ rises, but } p \text{ falls}}.$$

Kalecki-Rao: Jobless Modernization

- With Kalecki-Rao, Lewis's "unlimited supplies of labor" breaks down.
- Start in the surplus labor phase, with $L_a + L_m < L$.
- Suppose K_m goes up. In Lewis, L_m goes up in tandem.
- Here, L_m **cannot change at all**

  (because L_a and Y_a are unchanged).
- This employment stagnation is "implemented" by a lower price p:

$$L_m = \underbrace{\left[\frac{p(1-\mu)M}{w}\right]^{1/\mu} K_m}_{K_m \text{ rises, but } p \text{ falls}}.$$

- $K_a \uparrow$ (or agrarian TFP $\uparrow$) does what K_m (or manufacturing TFP) cannot do on its own: it raises L_m and contributes to structural transformation.

Kalecki-Rao: Jobless Modernization

- Surplus labor phase makes the previous argument very stark:

- K_m fails to increase L_m **even when** there is a pool of untapped labor.

Kalecki-Rao: Jobless Modernization

- Surplus labor phase makes the previous argument very stark:
- K_m fails to increase L_m **even when** there is a pool of untapped labor.
- But the story is the same even under full employment.
- If K_m (or manufacturing TFP) rises, L_a, L_m, w ($= w_a = w_m$) all unchanged.
- p will fall to cancel the higher labor demand coming from higher K_m.

Kalecki-Rao: Jobless Modernization

- Surplus labor phase makes the previous argument very stark:
- K_m fails to increase L_m **even when** there is a pool of untapped labor.
- But the story is the same even under full employment.
- If K_m (or manufacturing TFP) rises, L_a, L_m, w ($= w_a = w_m$) all unchanged.
- p will fall to cancel the higher labor demand coming from higher K_m.
- **Bottom line:** m-sector accumulation alone $\Rightarrow$ jobless modernization.
- Investing in the a-sector — the sector we are trying to transform away from — creates employment in manufacturing.

Jobless Modernization

- GDP and employment growth, some developing countries. An et al. (2017).

	Yearly, 1991–2000		Yearly, 2001–2015	
Country	GDP	EMP	GDP	EMP
Egypt	4.27	1.47	4.33	2.31
India	5.73	0.60	7.09	0.61
Indonesia	4.84	1.96	5.41	1.73
Kenya	2.09	2.20	4.38	2.00
Morocco	4.78	5.11	4.46	1.04
Nicaragua	3.17	5.61	3.66	3.19
Pakistan	4.48	1.99	4.29	2.84
Philippines	2.75	2.51	5.11	2.46
Tanzania	4.15	2.55	6.41	3.34
Vietnam	7.40	2.20	6.54	2.33

Jobless Modernization

- India's per-capita GDP exhibits robust growth of 6–8% p.a. in recent decades:
- But **employment growth has been far weaker**
- especially in formal manufacturing jobs.

Jobless Modernization

- India's per-capita GDP exhibits robust growth of 6–8% p.a. in recent decades:
- But **employment growth has been far weaker**
- especially in formal manufacturing jobs.
- Employment in agriculture 63.5% (1991), down to 41.4% (2019).
- A fall of 22 pp over nearly three decades, ok but nowhere close to great
- This fall actually reversed over 2020–2023 (partly due to the Covid shock).

Policies and Politics

- Recall how employment growth stagnates when only K_m increases:
- The market responds by reducing p.
- The “terms of trade” turn against manufacturing.

Policies and Politics

- Recall how employment growth stagnates when only K_m increases:
- The market responds by reducing p.
- The "terms of trade" turn against manufacturing.
- Industrialists / manufacturing lobbies / even governments hate this outcome.
- Imagine pouring fresh capital into manufacturing, but ...
- ...the gains are "unjustly" eaten away by a rising price of food.

Policies and Politics

- Recall how employment growth stagnates when only K_m increases:
- The market responds by reducing p.
- The "terms of trade" turn against manufacturing.
- Industrialists / manufacturing lobbies / even governments hate this outcome.
- Imagine pouring fresh capital into manufacturing, but ...
- ...the gains are "unjustly" eaten away by a rising price of food.
- The politics of this can become very nasty indeed.
- Industry develops a vested interest in *taxing* agriculture.

Agrarian Taxation

- **Who would support agricultural taxation?**

- Industrialists would:

  agrarian surplus removed for industry,

  wages kept down.

Agrarian Taxation

- **Who would support agricultural taxation?**

- Industrialists would:

  agrarian surplus removed for industry,

  wages kept down.

- Industrial workers wouldn't:

  greater out-migration from agriculture $\Rightarrow$ job competition in Industry.

Agrarian Taxation

- **Who would support agricultural taxation?**

- Industrialists would:

  agrarian surplus removed for industry,

  wages kept down.

- Industrial workers wouldn't:

  greater out-migration from agriculture $\Rightarrow$ job competition in Industry.

- Farmers wouldn't:

  they are the ones who are taxed!

  though profit-maxing large farmers welcome lower rural wages ...

- **Politically highly polarized issue**, both in capitalist and in mixed economies.

Agrarian Taxation

- Kalecki-Rao casts a deep shadow here:
- Greater agrarian taxation $\Rightarrow$ underinvestment in agriculture.
- **Longer-run repercussions via the basic needs constraint.**

Agrarian Taxation

- Kalecki-Rao casts a deep shadow here:
- Greater agrarian taxation $\Rightarrow$ underinvestment in agriculture.
- **Longer-run repercussions via the basic needs constraint.**
- Tension between a short-term view of agriculture as a sector to be squeezed for *current* surplus and a long-term view of agriculture as a sector to be invested in.

Agrarian Taxation

- Kalecki-Rao casts a deep shadow here:
- Greater agrarian taxation $\Rightarrow$ underinvestment in agriculture.
- **Longer-run repercussions via the basic needs constraint.**
- Tension between a short-term view of agriculture as a sector to be squeezed for *current* surplus and a long-term view of agriculture as a sector to be invested in.
- So in practice, **agrarian taxation has been approached with caution**.
- Besides, farmers form a large voter base and antagonizing them isn't pleasant.
- Agricultural income typically hard to measure, making it harder to tax.

Agrarian Surplus in the Soviet Union and China

- Of the Soviet Union of the 1920s, **Maurice Dobb** (1966) wrote:

"The rate at which agricultural production could expand and afford a growing supply of raw materials for industry **and foodstuffs for industrial workers** appeared as the crucial question in economic discussion in the second half of the decade: an issue upon which all other hopes and possibilities rested."

Agrarian Surplus in the Soviet Union and China

- Of the Soviet Union of the 1920s, **Maurice Dobb** (1966) wrote:

"The rate at which agricultural production could expand and afford a growing supply of raw materials for industry **and foodstuffs for industrial workers** appeared as the crucial question in economic discussion in the second half of the decade: an issue upon which all other hopes and possibilities rested."

- Agricultural investment did happen:

- e.g. tractor imports for state farms.

- marketed surplus of foodgrain very low

- With land reform of 1917, peasants were also eating more.

Agrarian Surplus in the Soviet Union and China

- "What was to be done to make up the lost ground? It was necessary first of all to strike hard at the *kulaks* (rich peasants) and the speculators . . . Hence the second relapse into emergency measures, administrative arbitrariness, violation of revolutionary laws, raids on peasant houses, illegal searches, and so forth, which affected the political conditions of the country and created a menace to the *smytchka* between the workers and the peasants." (Dobb quotes Stalin)
- This was a two-edged sword: grain was wanted, but short-run gains in food collection were met only with longer-run resistance.
- Ethnic tensions: see the account of food procurement and Ukrainian famine mortality over 1932–33 by Markevich, Naumenko and Qian (2024).
- The Ukrainian tragedy was part of a historic decision to embark on state collectivization of agriculture.

Agrarian Surplus in the Soviet Union and China

- **China's command and control system** during the 1950s and 1960s:
  - All food above agrarian subsistence procured for urban subsistence.
  - Farmer incentives could be minimal (as they were in the Soviet Union).

Agrarian Surplus in the Soviet Union and China

- **China's command and control system** during the 1950s and 1960s:
  - All food above agrarian subsistence procured for urban subsistence.
  - Farmer incentives could be minimal (as they were in the Soviet Union).
- To circumvent this, the government set up **moving regional targets**:
  - based on verified audited reports of *past* regional production.
  - These targets would have to be met: the peasants could keep the rest.
  - Yes, incentives are high, but with a sudden dip in agrarian output, widespread starvation could be a real possibility.
- Meng, Qian and Yared (2014) trace **China's Great Famine** (1959–1961) in part to this policy.

Agrarian Surplus in the Soviet Union and China

- **China's Great Famine** (1959–1961):

  - Around 45m died, even though production stayed above subsistence needs.

  - Reminiscent of Amartya Sen's 1981 account of the Great Bengal Famine in 1943.

Agrarian Surplus in the Soviet Union and China

- **China's Great Famine** (1959–1961):
  - Around 45m died, even though production stayed above subsistence needs.
  - Reminiscent of Amartya Sen's 1981 account of the Great Bengal Famine in 1943.
- Mortality rates **higher** where historical food production per capita was higher!
  - Smoking gun for use of past production to set procurement targets. Why?

Agrarian Surplus in the Soviet Union and China

- **China's Great Famine** (1959–1961):
- Around 45m died, even though production stayed above subsistence needs.
- Reminiscent of Amartya Sen's 1981 account of the Great Bengal Famine in 1943.
- Mortality rates **higher** where historical food production per capita was higher!
- Smoking gun for use of past production to set procurement targets. Why?
- Say a region historically produces x, so set target is $x - z$ (z=subsistence).
- If actual output is y, keep $y - x + z$. If $y = \beta x$, then keep

$$(\beta - 1)x + z$$

- If $\beta < 1$, this number **declines with higher** x!

Agrarian Surplus in the Soviet Union and China

- **China's Great Famine** (1959–1961):
- Around 45m died, even though production stayed above subsistence needs.
- Reminiscent of Amartya Sen's 1981 account of the Great Bengal Famine in 1943.
- Mortality rates **higher** where historical food production per capita was higher!
- Smoking gun for use of past production to set procurement targets. Why?
- Say a region historically produces x, so set target is $x - z$ (z=subsistence).
- If actual output is y, keep $y - x + z$. If $y = \beta x$, then keep

$$(\beta - 1)x + z$$

- If $\beta < 1$, this number **declines with higher** x!

Agrarian Price Manipulation

- **Support prices for procurement or price guarantees**:

  - Brazil, India, Mexico, …

Agrarian Price Manipulation

- **Support prices for procurement or price guarantees**:
  - Brazil, India, Mexico, …
- Price supports can be costly as far as industrial capitalists are concerned:
  - In their eyes, every agrarian concession has bad repercussions
  - Higher industrial wages as agrarian incomes rise, or indirectly via food prices.

Agrarian Price Manipulation

- **Support prices for procurement or price guarantees**:
  - Brazil, India, Mexico, …
- Price supports can be costly as far as industrial capitalists are concerned:
  - In their eyes, every agrarian concession has bad repercussions
  - Higher industrial wages as agrarian incomes rise, or indirectly via food prices.
- That is why the typical price support program has two parts:

(a) procurement prices at which the government stands ready to buy

(b) a consumer subsidy: procured food is released at or below market prices.

- The subsidy comes out of the government budget, spreading the cost widely.

Agrarian Price Manipulation

- **Or inputs are subsidized:**

- Water, electricity, fertilizer, agricultural machinery …

  Malawi, Zambia, Tanzania, Nigeria …

  both direct input distribution and voucher-based systems (e.g., for fertilizer)

  The 2022–23 fertilizer subsidy in India $>$ 25% of personal income tax revenues!

Agrarian Price Manipulation

- **Or inputs are subsidized:**
  - Water, electricity, fertilizer, agricultural machinery …

    Malawi, Zambia, Tanzania, Nigeria …

    both direct input distribution and voucher-based systems (e.g., for fertilizer)

    The 2022–23 fertilizer subsidy in India $>$ 25% of personal income tax revenues!
- **Less transparent options include an overvalued exchange rate:**
  - Argentina, Mexico, Brazil, Peru, Nigeria, Zambia, Tanzania
  - Export prices kept artificially low (in domestic currency).
  - Discourages or even reverses food exports.
  - Sometimes (e.g., after a liberalization episode) ad hoc export controls:

    Indian controls on onions, sugar, and wheat after 1991.