



Labour

Casual Labour Markets



Types of Labour

- Two types of hired labor:
- (1) laborers that are hired on a casual basis, perhaps on some daily arrangement or for some prespecified short duration (such as the harvesting period)
- (2) laborers that are under some (implicit or explicit) long-term contract with their employer.
- The distinction between these two categories is important, because their markets work quite differently.
- Casual labor is normally hired to carry out tasks that are easily amenable to observation. Harvesting and weeding fall into this category.
- The tasks of long-term labor are somewhat more mixed. On large plots of land, a long-term employee may serve in a supervisory capacity, along with the owners of the farm. They might be responsible for tasks that require special care and are relatively difficult to monitor, such as the application of fertilizer and pesticides or the application of water. In addition, long-term employees might work at “standard” tasks along with their casual counterparts, participating in the harvesting process, for instance.
- This division of tasks is to be expected. In a long-term relationship, an employee can be held accountable for errors or deliberate mismanagement that are only known after the passage of some time (such as the wrong application of fertilizer or pesticide).
- With casual employees, even those resident in the same village, this may be far more difficult.
- The source of the difficulty isn’t that the culprit cannot be identified just because he was a casual employee; It is that the scope for “punishing” the casual employee is much narrower.
- With a long-term employee, future employment may be denied or the terms of employment may be modified.

Puzzle

Standard supply and demand models of the labor market tell us that the labor market will “clear” at a wage that mirrors accurately the opportunity cost of the worker’s time.

If denied employment, the worker can find employment elsewhere at the same wage, or even if the worker is unemployed, the utility of the additional leisure just compensates for the loss in wages.

In that case, the employer has no additional power over a long-term employee, because the denial of employment has no adverse consequences.

This suggests that the standard model may be inappropriate for thinking about long-term relationships.

Long-run contracts must involve payments that exceed the alternative expected returns from defaulting on the contract.

Our goal in this chapter is to study how the casual and long-term labor markets function and to bring out some key differences between the two kinds of markets.

Standard SS-DD Theory

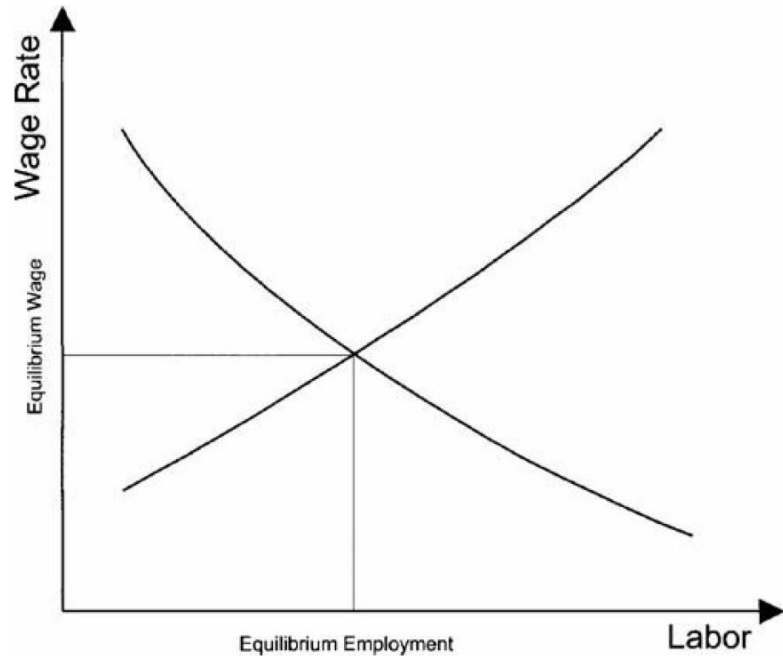


Figure 13.1. Supply of and demand for labor.

- The demand for labor depends, among other things, on the “going” wage (captured by w)
- If the going wage falls, the demand for labor should be further stimulated (or at least not lowered), so that the resulting demand curve is downward sloping.
- The supply curve of labor is derived by a calculation of the costs and benefits of working.
- A higher going wage serves as better compensation for the use of labor, so this should elicit a greater supply of labor from each worker, as well as encourage a larger number of workers to enter the labor market.
- For both these reasons, it makes sense to assume that the supply curve of labor is upward sloping.
- The intersection of the supply and demand curves then gives us the equilibrium wage

Shortfalls of the Std. Model

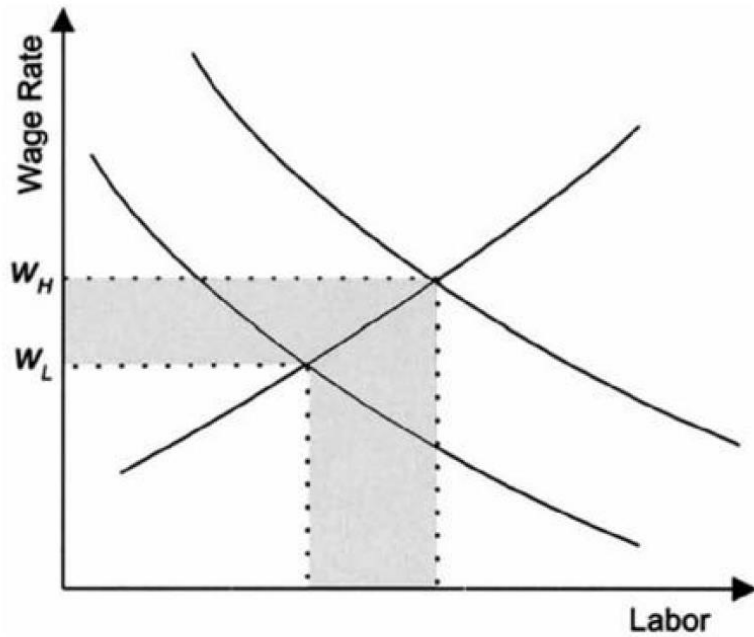


Figure 13.2. Labor market equilibrium under uncertainty.

- The model does not make a distinction between casual and long-term labor. It is as if different periods of time are neatly separated: what happens in tomorrow's labor market has no bearing in what occurs today and vice versa.
- The model fails to make a useful distinction between labor power and laborers: some individuals may be excluded from the labor market because their work capacity does not permit them to participate at an adequate level.
- Each laborer in the equilibrium of this model will be perfectly indifferent between working for his current employer and entering the labor market to search for another employer. When tasks are difficult to supervise and shirking can only be punished by termination of employment, the state of affairs described in Figure 13.1 may not persist. Put another way, the standard story assumes that all work is perfectly monitorable.
- An equilibrium of the standard model in which some workers don't find jobs must leave every worker indifferent between working and not working at all. There is no such thing as involuntary unemployment in the model.
- Rural labor markets are characterized by substantial uncertainty and/or seasonality in agricultural production. For instance, suppose that rainfall levels are uncertain and that this will affect the size of the harvest thereby affecting the total demand for harvesting labor. The labor demand curve itself becomes uncertain; it fluctuates between the highs and lows.
- The corresponding equilibrium wages fluctuate as well: the fluctuations lie between a band of w_H and w_L .

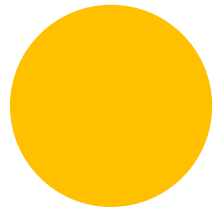
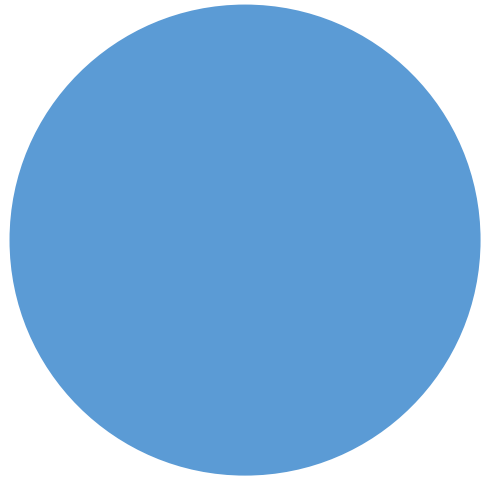
Shortfalls (Contd.)

Despite capturing some aspects of uncertainty, fails to tell the whole story

It does not illustrate the ways in which employees and employers cope with uncertainty ex ante by writing contracts or making informal agreements that insure one party or the other.

Workers may wish to smooth out seasonal fluctuations in their wage income, and employers who are willing to provide such income smoothing may be preferred by employees.

The standard model is too simplistic to take these features into account.



Nutrition and Labour Markets

The Basic Model

Assumptions



All income is converted into nutrition



The horizontal axis represents different income levels



The vertical axis represents work capacity



Work capacity is defined as a measure of the total number of tasks an individual can perform during a given period



(Say) the number of bushels of wheat that he can harvest during a day.



The capacity curve (CC) is found by linking different nutrition (or income) points to the corresponding levels of work capacity that are generated by the individual.

S shaped CC

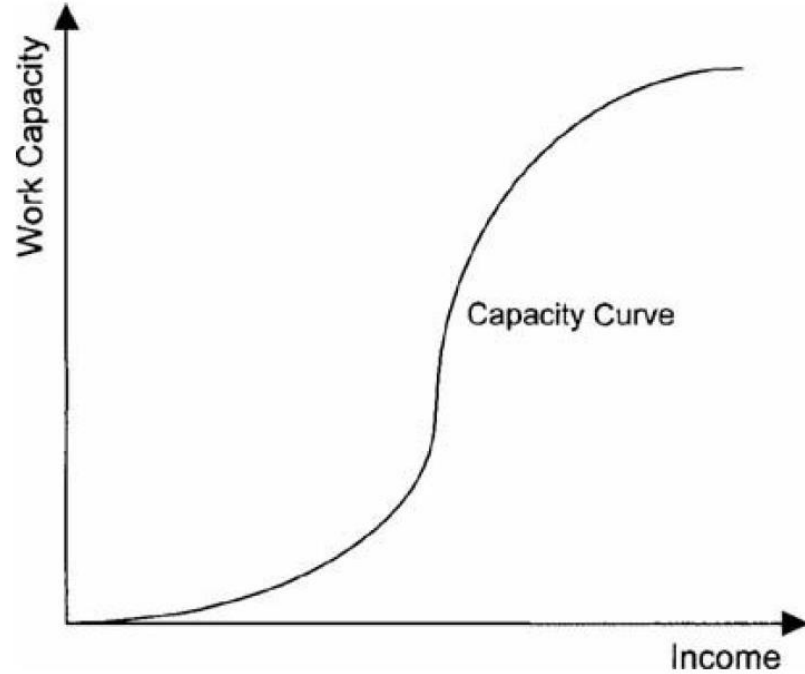


Figure 13.3. The capacity curve.

- Most nutrition initially goes into maintaining the body's resting metabolism.
- In this stretch very little extra energy is left over for work, so work capacity in this region is close to zero and does not increase too quickly as nutrition levels change.
- Once resting metabolism is taken care of, there is a marked increase in work capacity with nutrition.
- Finally, there is a phase of diminishing returns, as natural bodily limits restrict the conversion of increasing nutrition into ever-increasing work capacity.

Piece Rates

Income determines work capacity, but work capacity determines income as well.

(Say) incomes are generated by working in a labor market where **piece rates** are paid: **payment on the basis of tasks completed**, such as 10 rupees per harvested bushel.

If income is paid per unit of task—say 10 rupees per bushel harvested—then there is a relationship between the number of tasks that are performed (bushels harvested) and total income.

Thus, piece rate represents a relationship between the number of tasks performed and the total income of a person.

Four piece rates are shown: v_1 , v_2 , v_3 , and v_4 .

v_1 is larger than v_2 , which in turn exceeds v_3 , which is larger than v_4 .

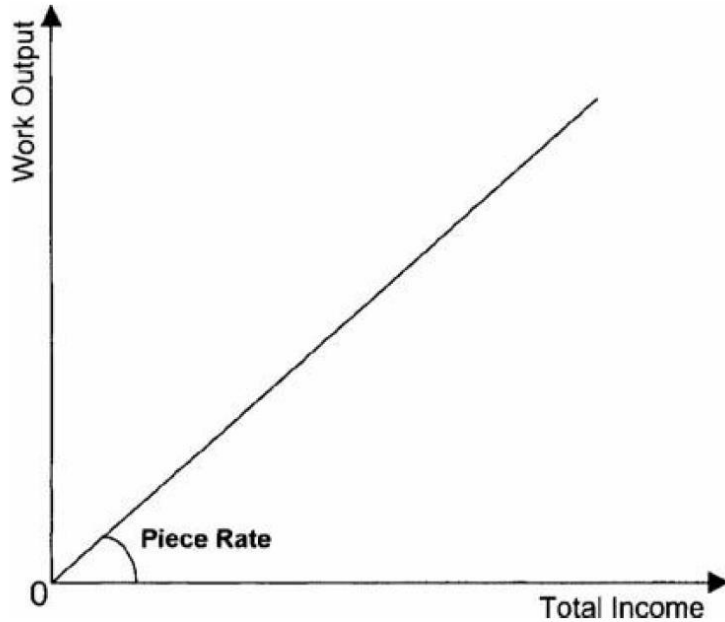


Figure 13.4. A piece rate.

Labour SS

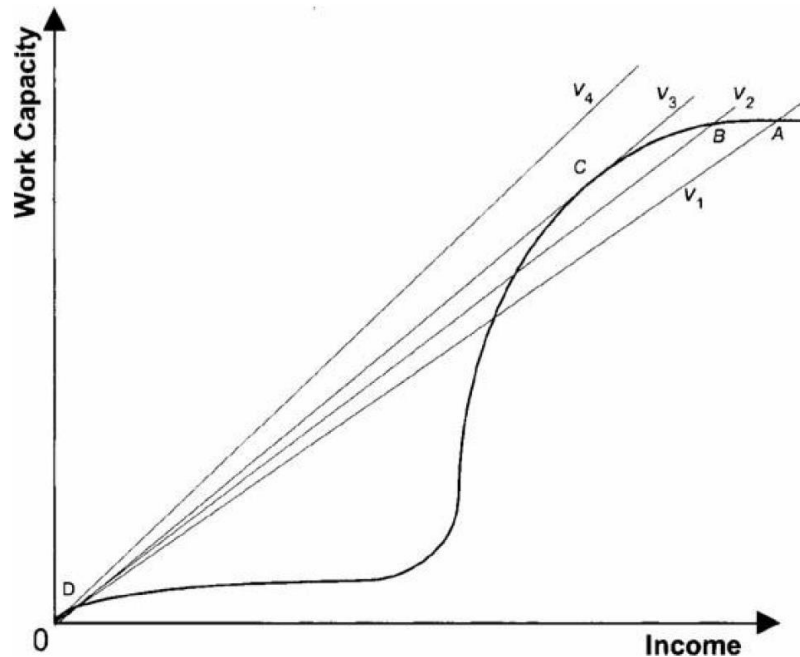


Figure 13.5. Piece rates and work effort.

- Suppose a laborer tries to obtain the highest possible level of income that he can possibly earn, given the constraints imposed by his capacity curve.
- Suppose, first, that the going piece rate is v_1 . The laborer will clearly choose the point A, which yields the largest possible feasible income for him.
- As the piece rate drops to v_2 , this maximum income falls. On the graph, he now slides down to the point B, which involves less total work and lower income.
- v_3 is just tangent to the capacity curve along its hump. At this piece rate he can just about choose the point C.
- If the piece rate drops a little more, then the amount of work that he can supply drops dramatically, jumping, from a point like C to a point like D (which is the intersection of the lowest piece rate with the capacity curve).
- This jump occurs precisely because of the capacity curve's shape with low levels of nutrition permitting only very low levels of work, and moderate to high levels creating a rapid increase in work capacity.

Aggregate SS

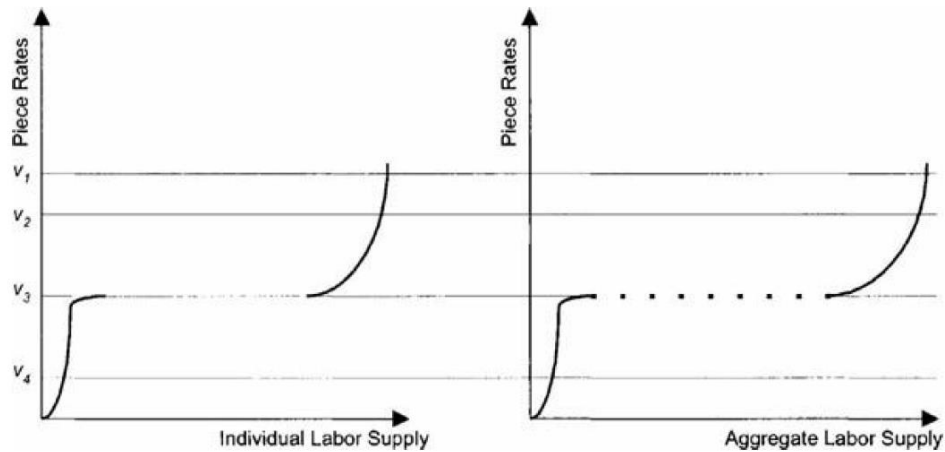


Figure 13.6. Individual and aggregate labor supply.

- We can use all this information to generate a supply curve of labor, which tells us the different levels of labor power supplied at different piece rates.
- All we have to do is multiply an individual laborer's labor supply (at each piece rate) by the number of laborers in the economy to get the aggregate labor supply.
- The left-hand panel of shows a single worker's labor supply.
- The gap in labor supply at the piece rate v_3 captures our previous discussion that after a certain threshold wage, labor supply must jump discontinuously.
- The right-hand panel effectively multiplies this individual supply curve by the number of laborers.

Equilibrium

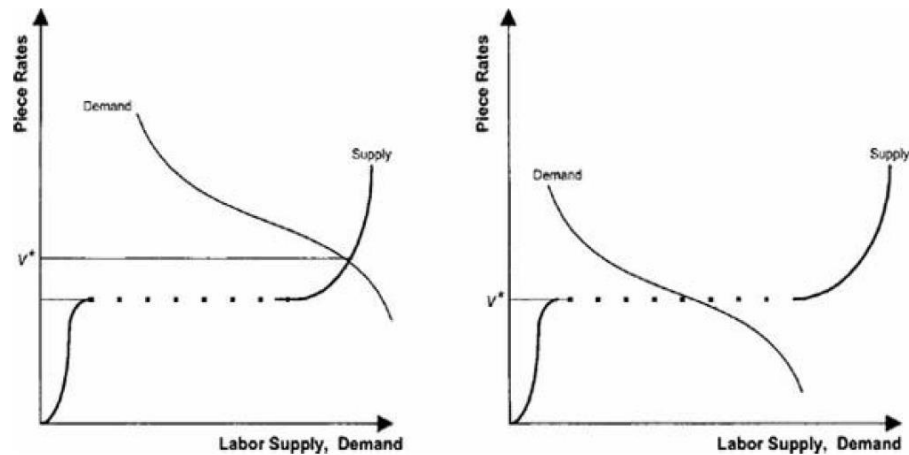


Figure 13.7. "Equilibrium" in the labor market.

- The demand curve for labor is downward sloping to capture the fact that if labor is cheaper, employers will demand a larger quantity of it.
- Two cases are of interest.
- In the first case, represented by the left-hand panel, the demand curve for labor cuts the supply curve at a point that is beyond the gap in the supply curve.
- The market determines an equilibrium piece rate v^* and everybody gets to supply a "high" level of work effort, that is, a level of work effort that is somewhere on the hump of the capacity curve for each laborer.
- The market clears in a standard fashion. This case obtains if demand is large relative to supply.

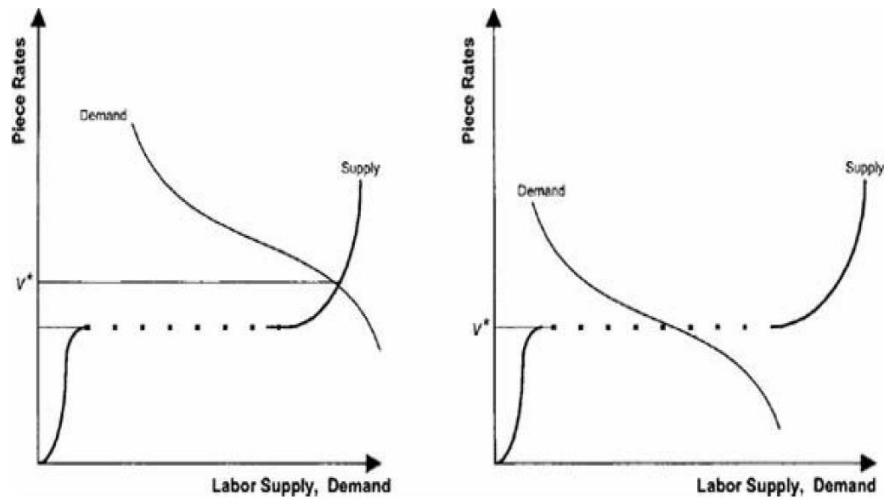


Figure 13.7. "Equilibrium" in the labor market.

- In the second case, represented by the right-hand panel, supply is large relative to demand, so that the demand curve passes through the dotted gap in the aggregate supply curve.
- We have a problem with determining the equilibrium piece rate. If the rate is any larger than v^* , we have excess supply, which brings the piece rate down.
- On the other hand, for piece rates below this critical level, there is excess demand, so that wages are bid up.
- However, note that a piece rate of exactly v^* can be thought of as an equilibrium, provided that we admit the idea of unemployment.
- We can "fill in" the gap in the aggregate supply curve by having some people work and restricting labor market access to others.
- This unemployment is involuntary in the sense that unemployed people are strictly worse off than their counterparts who are lucky to find employment.
- However, the piece rate cannot be bid down because no one can "credibly" supply the same amount of labor at any lower piece rate.
- We see, then, that the vicious cycle is complete in this little model. Lack of labor market opportunities makes for low wages, but it is not only that wages determine work capacity: a low capacity to work feeds back on the situation by lowering access to labor markets!

Nonlabor Assets: “People may have other sources of income”

- When (say) assets augment income possibilities, individuals are more easily able to participate in the labor market. This is expressed diagrammatically in Figure 13.8, which compares two individuals.
- The left hand panel depicts a worker, Timir, who has access to a source of nonlabor income, of size R (think of this as rent from his own landholding). Now work capacity depends on rent plus wages.
- If the horizontal axis only involves wage income, this is done by “shifting” the capacity curve horizontally to the left by the amount R .
- The right-hand panel superimposes this diagram on the corresponding picture for Mihir, who has no sources of nonlabor income.
- Note that although Mihir may be biologically just the same as Timir, his capacity curve lies to the right and below that of Timir, who enjoys some land rents.
- Two piece rates are drawn, v_1 and v_2 .
- Under v_1 , Mihir is only able to supply a small amount of labor; he is effectively excluded from the labor market. Timir can supply labor at v_1 .
- Even if piece rates are so high that both can supply labor (as in the case of v_2), note that Timir is still earning a larger income than Mihir.
- The larger size of Timir’s income is not just because of his nonlabor assets: he earns higher wage income.
- Thus inequalities in the asset market magnify further into labor market inequalities.
- People without assets are doubly cursed. Not only do they not enjoy nonlabor income, they are at a disadvantage in the labor market relative to those who do possess assets.

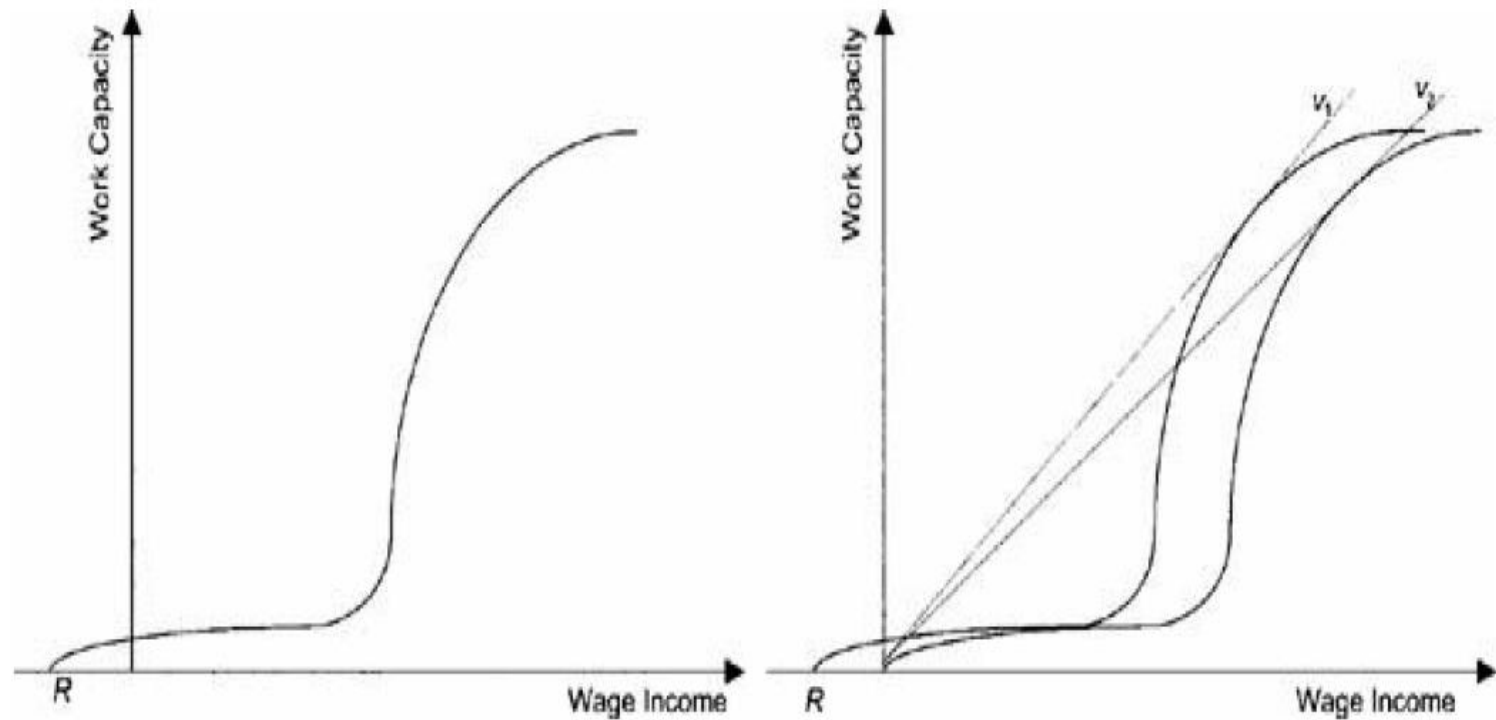


Figure 13.8. How nonlabor assets affect labor income.

Asset Inequality and Labor Markets

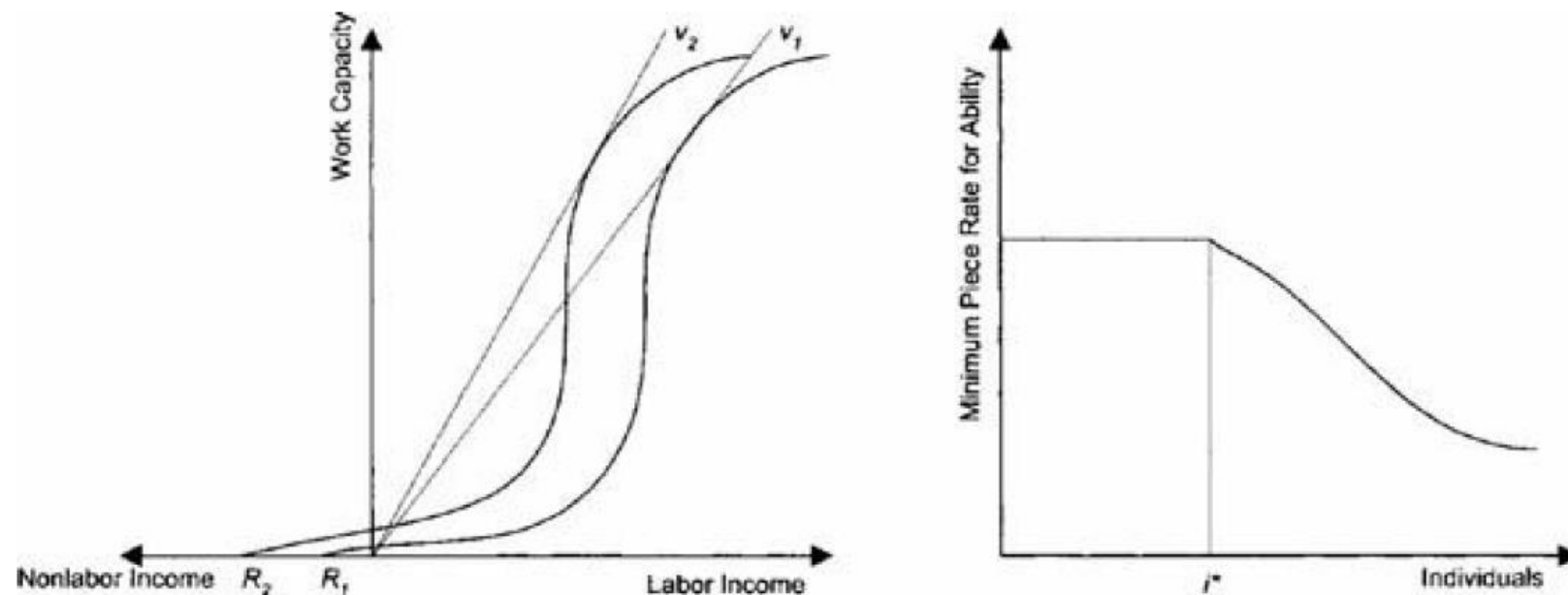
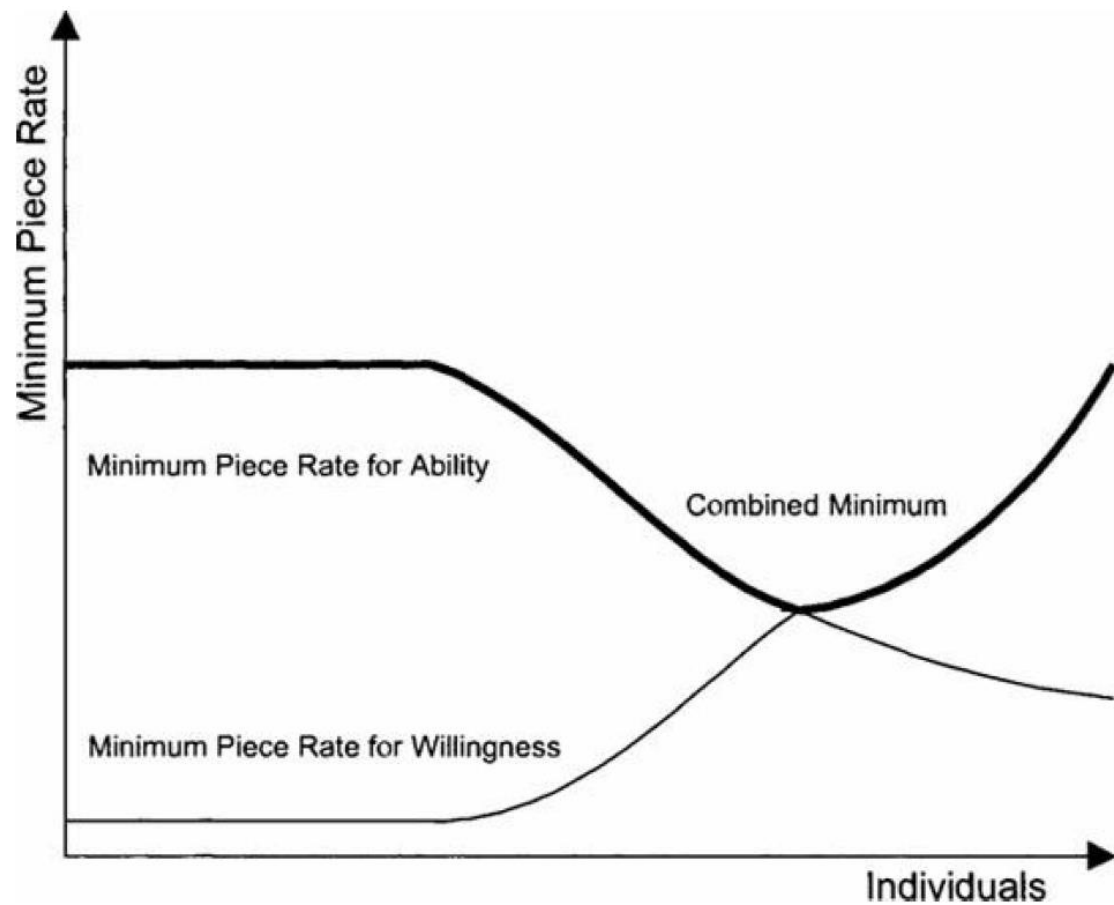


Figure 13.9. The minimum piece rate that determines ability to work.

- Assumptions:
- Only one commodity: food
- Inputs: Land and Labour Power
- Many individuals; each: same CC
- Only 1 type of asset: land; unequal distribution
- For each person with or without landholdings, we keep track of the minimum piece rate at which he will be able to supply labor to the labor market.



- The left-hand panel shows that people with greater amounts of nonlabor income (rental income from land) are able to supply their labor at a lower threshold piece rate, simply because their rental income takes care of some of their nutritional needs.
- The right-hand of the figure plots this minimum against people arranged in increasing order of land income.
- People up to the index i^* are landless, so for them the minimum piece rate is unchanging. Thereafter, the minimum falls as land income increases.
- The minimum piece rate represents the least amount for which an individual will be able to work in the labor market.
- The minimum wage at which a person will be willing to work rises with the amount of nonlabor income. This is because a person who has other sources of income, will value leisure more highly and will be willing to sacrifice it only for high enough compensation.
- Thus two opposing forces are at work.
- At very low levels of nonlabor income, people will be willing to work for anything, so that the consideration that really binds is the minimum piece rate at which they can work.
- As nonlabor income increases, this “ability-based” minimum rate falls, and at some point the willingness to work becomes the binding constraint: ability is no longer an issue.
- We may therefore combine the two minimum piece rates.
- The resulting U-shaped curve represents the minimum piece rate at which individuals are willing and able to work.
- Given that individuals are arrayed in order of increasing nonlabor income, the falling portion of the curve corresponds to the zone in which ability is the operative constraint.
- The rising part of the curve represents the zone in which willingness is the operative constraint.

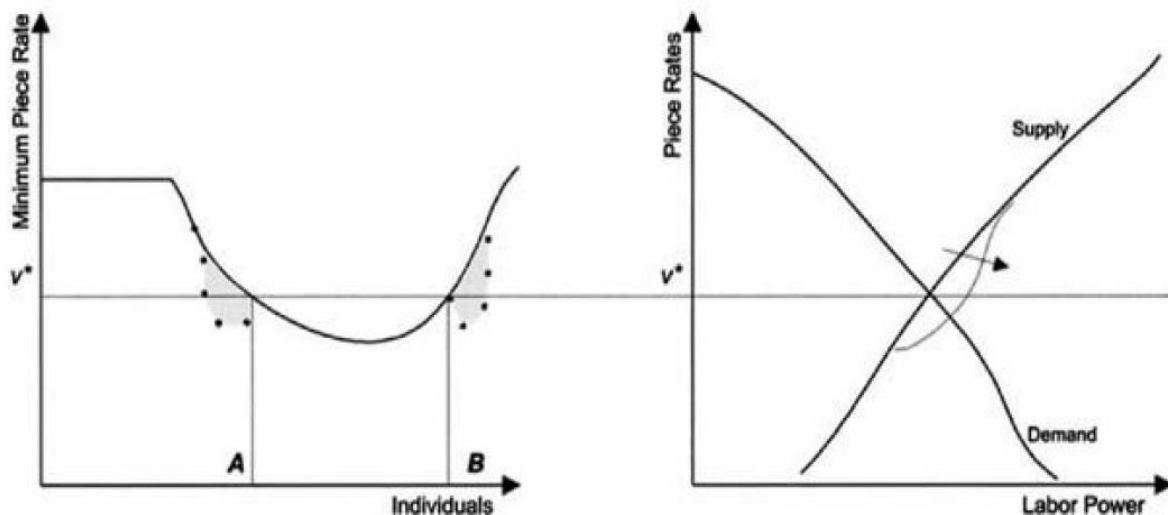


Figure 13.11. Market equilibrium.

- Second, the losers of land become more willing to work, because their nonlabor income has decreased, so their minimum piece rates decline as well!
- This is shown in Figure 13.11 by the dotted bulges that appear to the left of A and to the right of B.
- What is the effect on labor supply?
- At the going piece rate depicted in the diagram, labor supply must increase, because there are some more people who are able to work and there are more people who are willing to work; shown by the dotted shift of the labor supply curve in the right-hand panel of the diagram.
- It follows that equilibrium labor use must go up. This, in turn, implies that total output in the economy must increase.

- For each piece rate in the market, the supply of labor is given by the amounts worked by all those whose minimum piece rates lie below the going market wage.
- These are the individuals who are willing and able to work at the going piece rate.
- By varying the piece rate, we trace out a supply curve.
- The demand curve is drawn just as before.
- The intersection of the two curves represents market equilibrium.
- The left-hand panel of Figure 13.11 displays one such piece rate and the segment of people who do supply labor at that piece rate, shown by the line AB.
- People to the “left” of A and to the “right” of B are unemployed, but take a closer look and you will see that they are unemployed for very different reasons.
- People to the right of B are able to work, but they do not wish to. We can call them the voluntarily unemployed. Their nonlabor incomes, are too high for them to be attracted by the going piece rate.
- Contrast this with the individuals to the left of A, who are unemployed not because they are unwilling to work, but because they are unable to work at the going piece rate (their resulting incomes are not high enough to reproduce the needed work capacity). We can call them involuntarily unemployed.
- We can use this model to analyse the effects of changes in the distribution of wealth holdings.
- Suppose that wealth is transferred from those just to the right of B to the involuntarily unemployed just to the left of A.
- There are two immediate effects of this transfer. First, the beneficiaries become “more able” to work at the going market rates of remuneration.
- Their minimum piece rates come down, because their nonlabor income has increased.

- So a redistribution scheme such as land reforms have the power to increase overall output in the economy.
- Such reforms have three effects.
- First, the unemployed become more attractive to employers as their nonwage income rises. Second, those among the poor who are employed are more productive to the extent that
- they, too, receive land.
- Finally, by taking away land from the landed gentry, their reservation wages are lowered, and if this effect is strong enough, this could induce them to forsake their state of voluntary unemployment and enter the labor market.
- For all these reasons, the number of employed labor units in the economy rises and pushes the economy to a higher output equilibrium.
- There is no necessary conflict between equality-seeking moves and aggregate output in a resource-poor economy.

Casual Labour Markets

Model of Nutritional Status

“Casual labour markets neglect possible beneficial externalities”

- Long term investments: not feasible
- On the job training: individual efficiency as well as economywide efficiency
- Firms: unable to capture entire benefits of the training activities since workers might change jobs
- Collapse of labour markets in case firms cannot reap benefits of their investments/ recoup costs incurred: externality
- Similar argument extends to nutritional status in casual labour markets
- Well-nourished workers are of great long-term advantage to their employers, provided that there is some way to guarantee that such workers remain in the employer's keep.
- In the absence of such guarantees, the collapse of nutritional status in a poor rural labor market can be comprehensive.
- Investments that have a beneficial impact: health insurance, higher education, financing for workshops, seminars etc.
- Key: restrictions to labour movements
- Flaw: costs
- Catchall: nutrition

A model for Nutritional Status

- Nutrition: person-specific investments that have effects over time.
- A worker's current nutritional status, and therefore his ability to carry out sustained work, depends not only on his current consumption of nutrients, but also on the history of that consumption.
- The curves marked A and B are capacity curves corresponding to distinct nutritional histories.
- Observe that work capacity varies with current nutrition (this is captured by the upward slope of the curve for any given history), but it is also affected by past nutrition (leading to distinct curves of the form A and B).

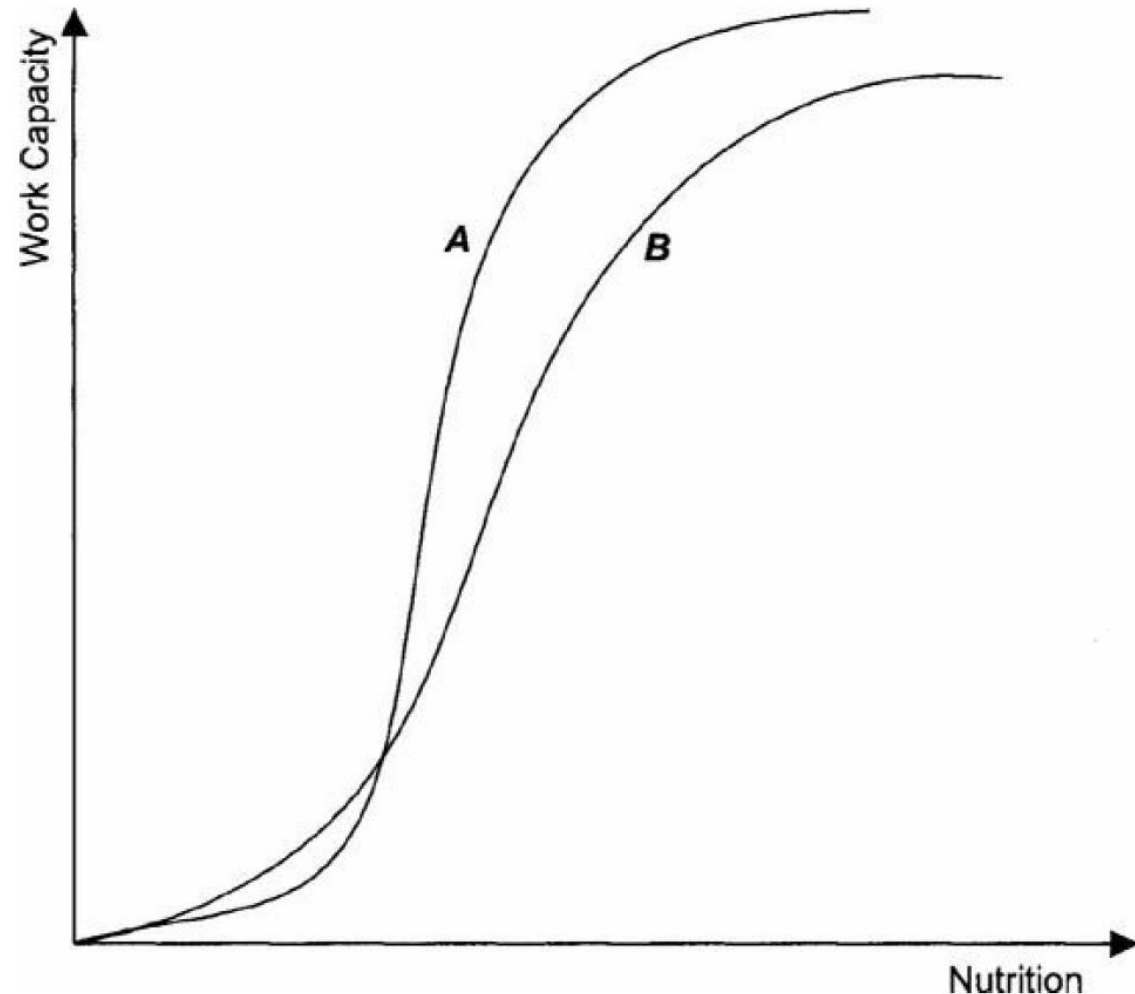


Figure 13.12. Nutritional history and the capacity curve.

- The nutritional intake (assumed to be a scalar variable such as calories for simplicity) of an individual consist of:
- maintenance of the body and physical activity of various types.
- Let x_t denote the energy intake of the individual at time t ,
- r_t denote resting metabolic rate,
- q_t denote the energy expended on physical activity, and
- b_t denote the energy released from (or stored in) the body.
- Then, neglecting losses due to the inefficiency of energy metabolism, we write the fundamental energy balance equation as

$$x_t = r_t + q_t - b_t$$

- nutritional status captures the state of an individual's physical health at any date and varies from date to date depending on the stresses he is subjected to as well as his access to nutritional inputs.
- we will equate it to body mass, which we denote by m : borrowing from the body tends to lower it, whereas storage tends to increase it. We can represent this schematically as:

$$\text{given } m_t \rightarrow \text{higher } b_t \rightarrow \text{lower } m_{t+1}.$$

- Employer's tradeoff: The employer pays a wage, which the individual uses to buy nutrition x ,
- but the employer also dictates the pace of work, which then affects q . However, the employer cannot get something for nothing.
- For a fixed wage, the higher he pushes the requirements of work, the greater will be the amount of borrowing from the body and the lower will be the next period's nutritional status

- Resting metabolism is related positively to body mass. Therefore, a lowering of body mass brings down resting metabolism.
- A lowering of r creates some extra elbow space in the energy-balance equation: the body eats up less for resting metabolism and can use this extra energy more “efficiently” for work.
- Call this the resting metabolism effect.
- A reduction in body mass might affect the way in which work input q is actually translated into work output.
- Greater physical health and strength may enable the individual to carry out tasks that an undernourished person finds difficult or impossible to do.
- In other words, better nutritional status may increase work capacity: call this the capacity effect.
- Net effect: For a given amount of borrowing, the capacity curve of a person with lower nutritional status has a tendency to shift
- upward. This is because of the resting metabolism effect: more energy can be channeled into work.
- At the same time, the increased energy available for work can be used better by a better-nourished person, especially at high ranges of work output: this is the capacity effect.
- Thus it seems reasonable to postulate that at low work levels, the former effect dominates, so that the capacity curve shifts down with better nutritional status, whereas at higher work levels the opposite occurs.
- If an employer can choose between creating the nutritional status given by A and that given by B, which one would he choose?
- Resting metabolism effect dominates anyway, so that the employer actually benefits from hiring undernourished people to do his tasks for him.
- This is possible, but it is unlikely if the tasks involve severe manual labor.
- In that case the capacity effect will dominate. It is more likely that the employer would prefer to sacrifice some current output from his employee, and/or pay a higher wage (thus increasing x_t), provided that the employee will be around tomorrow to allow him, the employer, to reap the benefits of this investment.