

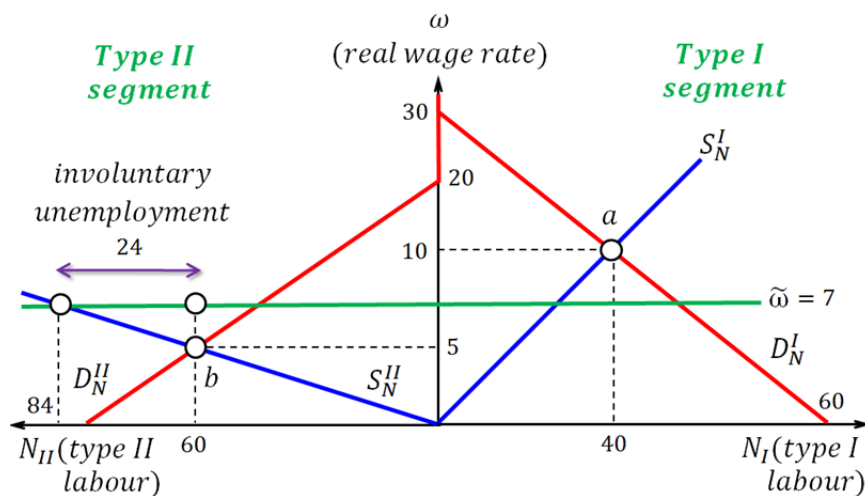
**A segmented labour market model**

Suppose workers may have some (perhaps economically irrelevant) feature that the (owners of) firms may like or dislike (for instance, being a man). Firms classify workers in two types (I and II) depending on whether they possess the feature or not.

Some firms (type I firms) prefer type I workers; the rest (type II firms) prefer type II workers. Each type of firms defines a different competitive labour market. Workers are unaware of the fact that there are two types of firms. From their perspective, the labour market is not segmented.

• **Example.** Letting  $\omega$  designate the real wage rate, the supply of labour function of type I workers is  $S_N^I = 4 \cdot \omega$ . The demand for labour function of type I firms is  $D_N^I = 60 - 2 \cdot \omega$  ( $N_I^d = 0$  if  $\omega > 30$ ). The supply of labour function of type II workers is  $S_N^{II} = 12 \cdot \omega$ . The demand for labour function of type II firms:  $D_N^{II} = 80 - 4 \cdot \omega$  ( $N_{II}^d = 0$  if  $\omega > 20$ ).

The market equilibrium for the type I segment is  $(N_I, \omega_I) = (40, 10)$ . The market equilibrium for the type II segment is  $(N_{II}, \omega_{II}) = (60, 5)$ . In this case,  $\frac{40}{40+60} = \frac{2}{5} = 40\%$  of employment corresponds to type I workers and  $\frac{60}{40+60} = \frac{3}{5} = 60\%$  to type II. Using these weights, the average real wage rate would be  $\tilde{\omega} = \frac{2}{5} \cdot \omega_I + \frac{3}{5} \cdot \omega_{II} = \frac{2}{5} \cdot 10 + \frac{3}{5} \cdot 5 = 7$ . At  $\tilde{\omega} = 7$ , no more type I workers than are actually employed would like to be hired. But, at  $\tilde{\omega} = 7$ , type II workers would like to supply  $S_N^{II} = 12 \cdot \tilde{\omega} = 84$ .



As employment of type II workers equals  $N_{II} = 60$ , there appears to be involuntary unemployment equal to  $S_N^{II}(\tilde{\omega} = 7) - N_{II} = 84 - 60 = 24$ . The unemployment rate is then  $24 / (24 + N_I + N_{II}) = 19.3\%$ . As shown in Fig. 7, each segment is in equilibrium although involuntary unemployment seems to exist.

Fig. 7. Segmented labour market example

**The employment-production-income-spending (E-PIS) model**

The model postulates three linear relations linking employment with production, income, and spending.

(1) EP relation (production → employment): establishes the amount of employment required to reach a certain GDP level; see Fig. 8.

(2) EI relation (income → employment): identifies the amount of labour supplied for every value of aggregate income; see Fig. 10.

(3) ES relation (employment → expenditure): indicates the aggregate level of spending (the aggregate demand AD) associated with any given amount of employment; see Fig. 9.

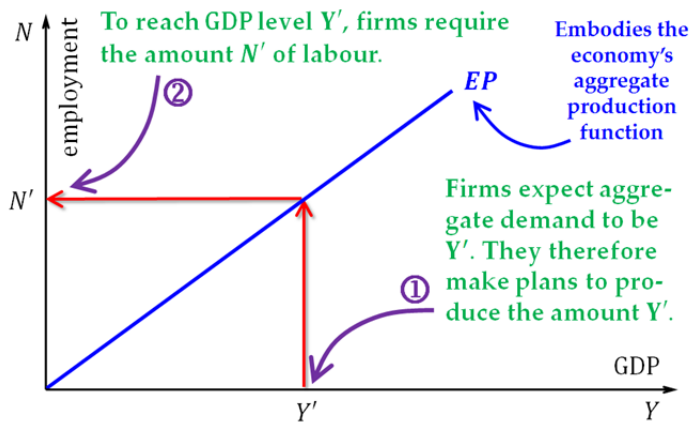


Fig. 8. The production-employment relation

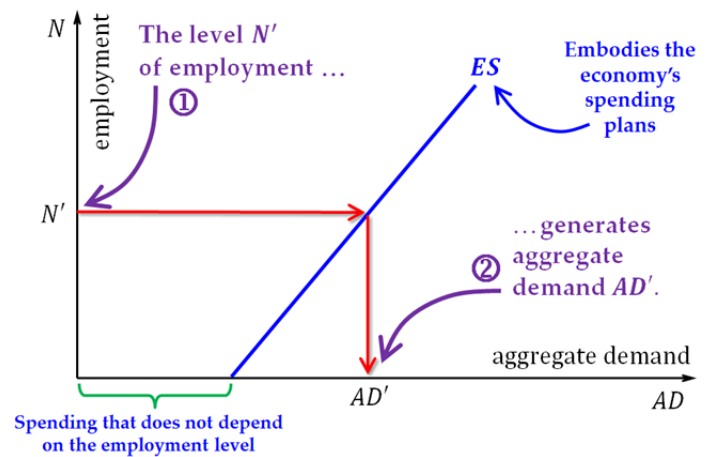


Fig. 9. The employment-expenditure relation

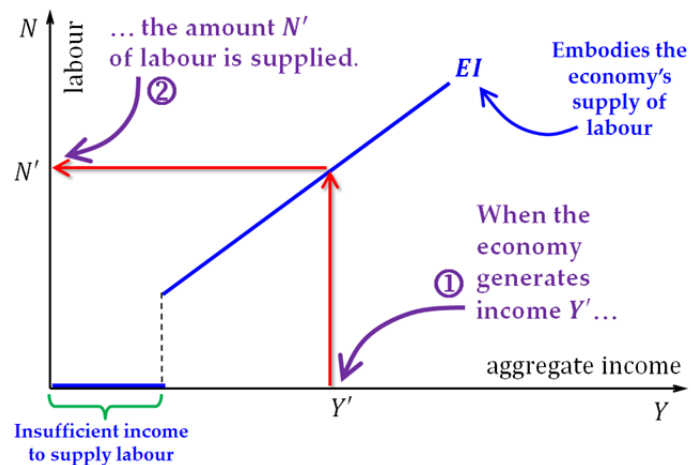


Fig. 10. The income-employment relation

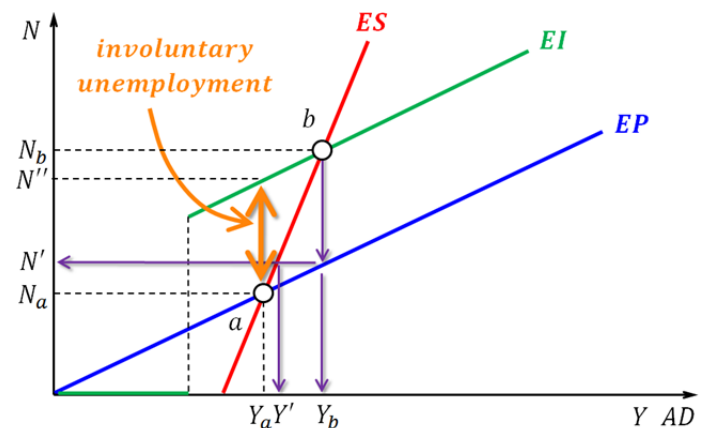


Fig. 11. The E-PIS model

When the three relations are drawn simultaneously, as in Fig. 11, there is no point at which the three lines intersect. Without delving into details, assume that the solution is found at a point when two lines intersect. Leaving the origin aside, there are two candidates: point *a* and point *b*.

Point *b* is not stable in the sense that it is not self-sustained. At *b*, employment is  $N_b$  and aggregate demand is  $Y_b$ . But, according to EP, to produce  $Y_b$ , the economy only needs the amount  $N' < N_b$  of labour. Hence, *b* does not represent a consistent state of the economy.

At *a*, employment is  $N_a$  and aggregate demand is  $Y_a$ . To generate a GDP equal to  $Y_a$  firms demand exactly the amount  $N_a$  of labour. In addition, the level  $N_a$  of employment generates precisely the level  $Y_a$  of aggregate demand. This state of the economy appears self-consistent and stable.

The problem is that there is involuntary unemployment at point *a*. Given income  $Y_a$ , workers would like to supply the amount  $N''$  of labour. Since employment at *a* is only  $N_a$ ,  $N'' - N_a$  defines the level of involuntary unemployment. Further investigations of the model are left as an exercise (for instance, what shifts in the lines would reduce involuntary unemployment?).

The arguably simplest description of an economy is given by the loop

... → **production** → **income** → **expenditure** → **production** → ...

The E-PIS model inserts labour in this loop; see Fig. 12. First, production creates a derived demand: the demand for labour. Second, the income the economy generates is a key variable helping workers to decide the amount of labour supplied. Lastly, the level of employment, once determined, significantly contributes to establish aggregate demand, which in turn affects production.

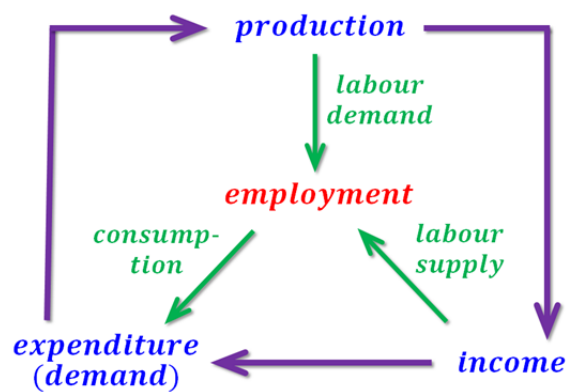


Fig. 12. Interpretation of the E-PIS model

The classical (orthodox) view of this process attributes to the labour market the leading role. Employment is first established, this next determines production, and production is finally used.

The Keynesian (heterodox) view inverts the order. First, expenditure decisions are made. These decisions indicate the necessary production level. Finally, the labour required to carry out the production plan is hired.

The E-PIS model aligns itself with the heterodox view. The state of the economy is foremost determined by the firms' expected level of aggregate demand. To meet the expected demand level  $Y$ , firms hire the amount of labour  $N$  necessary to produce  $Y$ . As long as the income level corresponding to production level  $Y$  induces workers to supply at least  $N$ , the employment-income relation is irrelevant.

Since there is no obvious reason why the EI relation cannot be established independently of the other relations, it is highly unlikely that workers will supply exactly  $N$ . Thus, the excess of labour supplied constitutes involuntary unemployment. As it emerges from the working of the economy itself, it seems that it will be hard to eliminate completely.

**The Marxist view of unemployment**

The Marxist view of capitalism holds that it is a system that experiences a continuous series of crisis. In each crisis inventories of unsold goods rise, production falls, banks go bankrupt, factories close down, and massive layoffs create an expanding and persistent pool of unemployed workers.

- **Remark 1.** Crises in capitalism are considered structural. The logic of capitalism is to increase profits by extracting surplus value generated by workers. The competition among firms to raise profits produces, through the more intense exploitation of the workforce, the unintended consequence of a falling profit rate because the mass of workers do not receive the necessary income to purchase all the production generated by firms. The result is an overproduction (or an underconsumption) crisis, as total production outstrips total consumption.
- **Remark 2.** Globalization has transformed the world economy into an arena where gigantic transnational corporations conduct two strategies that make crises more severe: a worldwide race to the bottom in wages that pits workers of different nations against each other (the 'one big fact': between 1985 and 2000, the world working class increased by 1.47 billion workers) and the development of technological innovations that save labour or facilitate offshoring and outsourcing.