

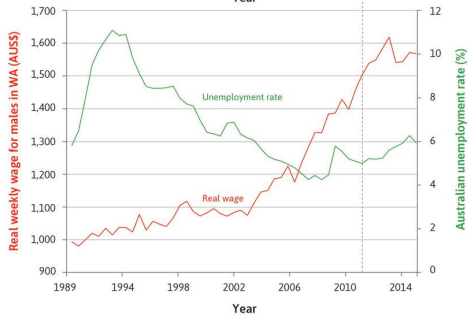
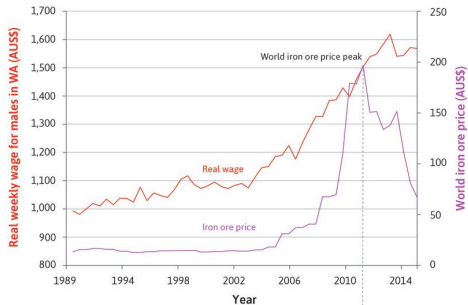
# The Labour Market: Wages, Profits and Unemployment

## ECONOMICS

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Lecture 9



# AUSTRALIA AND COMMODITY BOOM

## *Natural resource boom:*

Boom in ore prices (in the top figure) made mining highly profitable, leading to strong demand for labour, which reduced the pool of unemployed workers.

Mining companies paid high wages while the mining boom lasted

## *Downturn:*

The downturn began 2011 and with decline commodity prices, unemployment began to rise.

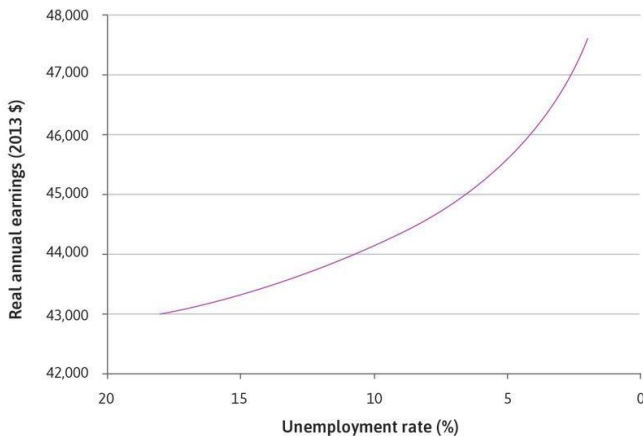
## *Unemployment and real wages:*

As unemployment fell, real wages rose

# PUZZLE

*Puzzle: why does wage increase as unemployment rate decreases?*

Not a simple demand and supply story.



# WAGE-EFFORT GAME

## Assumption

Worker's *effort unobservable* to the employer in the short-run

Worker's *effort observable* to the employer in the long-run

Workers can be *fired* for not working hard

## Timeline

1. Employer chooses *wage*
2. Workers choose *effort*
3. Employer *fires worker* if her effort is not profitable for him

# WAGE-EFFORT GAME: BEST RESPONSE

Worker exerts *best-response effort* to prevent getting fired.

- Higher the employee's *employment-rent*, higher the effort she exerts
- The employment rent is high if

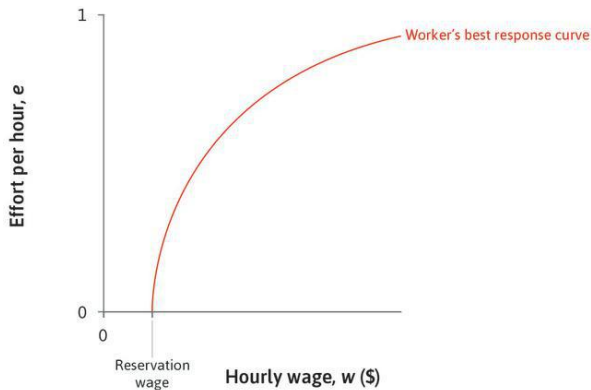
*Wage* is *high*

*Reservation wage* is *low*

*Unemployment rate* is *high*

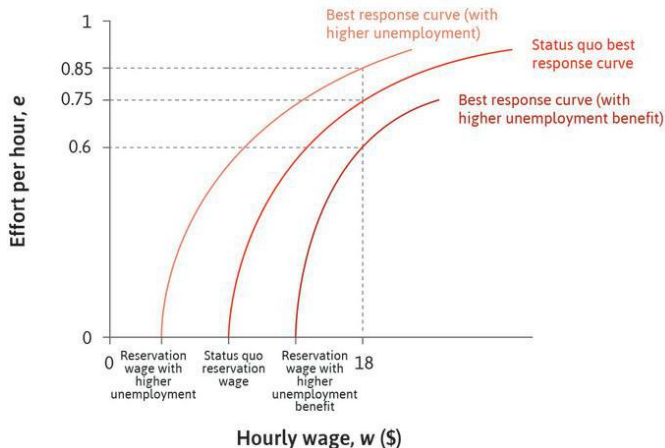
# WORKER'S BEST RESPONSE CURVE

The *best response curve* gives us the effort level the worker chooses for each wage where effort is increasing in wage.



## Best response curve

- shifts up with higher unemployment and
- shifts down with higher unemployment benefit





# ISO-COST LINES

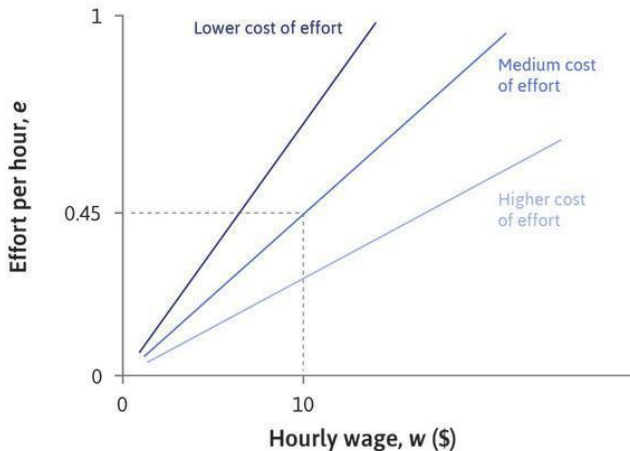
*Cost of effort* is the wage paid to extract each unit of effort ( $e = 1$ ).

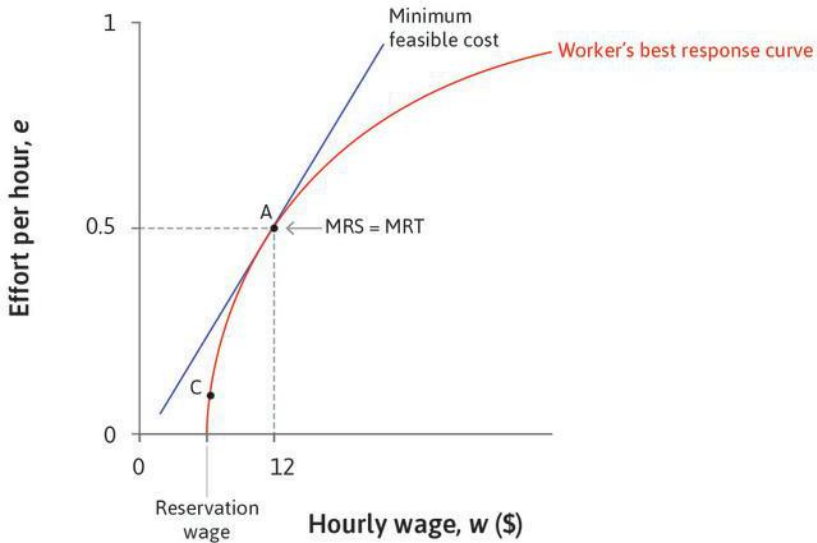
*Cost of effort* remains constant along an *iso-cost line*.

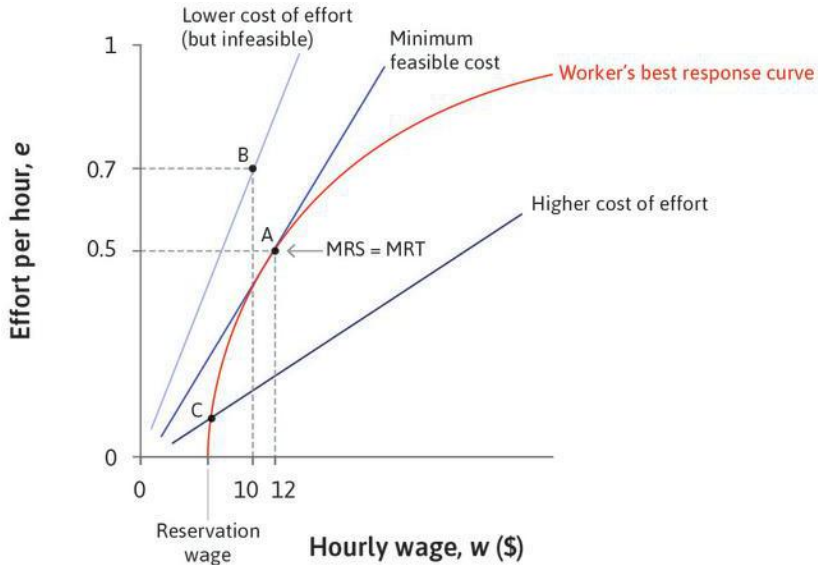
Effort $e$	Wage $w$	Cost of effort $\frac{w}{e}$
0.45	£ 5.53	12.29
0.45	£ 10.00	22.2
0.6	£ 7.38	12.29
0.6	£ 13.33	22.22
0.9	£ 11.06	12.29
0.9	£ 20.00	22.22

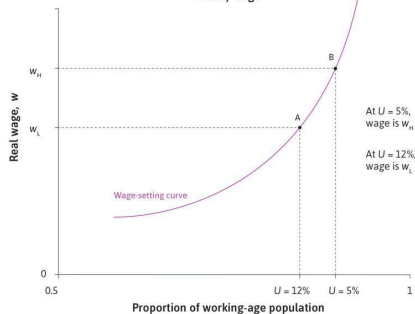
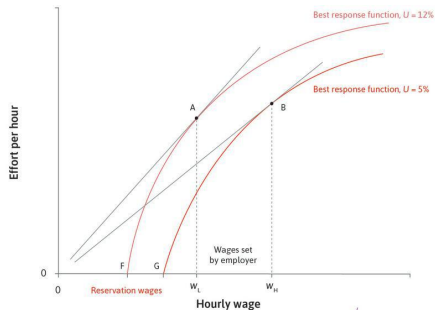
*Low effort iso-cost lines* are steep

*High effort iso-cost lines* are less steep

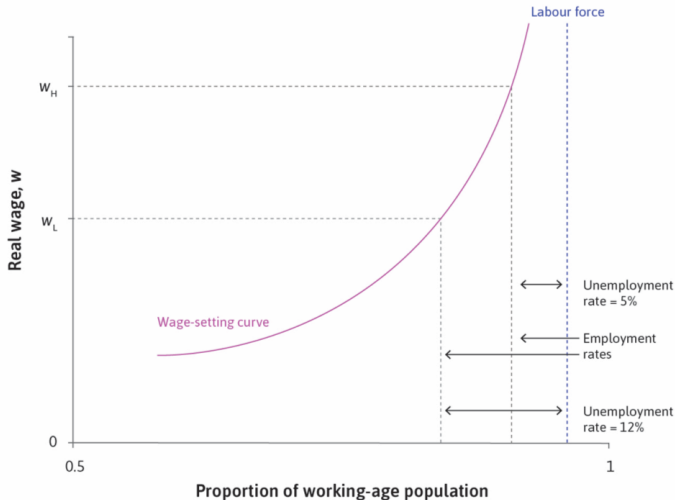








*Wage-setting curve* gives us the *real wage necessary* at each level of economy-wide employment to provide workers with *incentives to work hard*.



# CONSUMER'S CHOICE

## *Differentiated products*

a variety of goods that consumers perceive to be different (*imperfect substitutes*) in terms of either *quality* or *branding*.

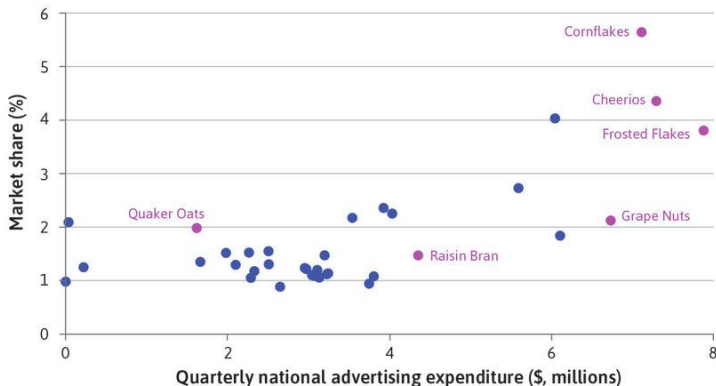
E.g., car, shampoos, matches.

# DIFFERENTIATED PRODUCTS AND ADVERTISING

*Market share of cereals in Chicago (1991-1992)*

*correlated* with *advertising expenditure*

*not correlated* with *price*





# MONOPOLISTIC COMPETITION

*Monopolistic competition*: producers compete in a differentiated product market, e.g., cereal market in Chicago.

Each producer produces *one variety* (requires fixed cost to create)

Producer has some *market power* over that variety but also implicitly competes with the closest substitute.

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It occurs under two conditions:

*increasing returns to scale* (fixed cost)

*demand curve is not elastic*

because differentiated goods are not perceived by consumers as perfect substitutes for each other

# MONOPOLISTIC COMPETITION

In a differentiated products market, a *firm's profits* depends on  
*Elasticity of demand* for a particular good, which depends on  
*Preference of consumers*  
*Availability of substitutes*

*Advertising expenditure* can influence people's preferences

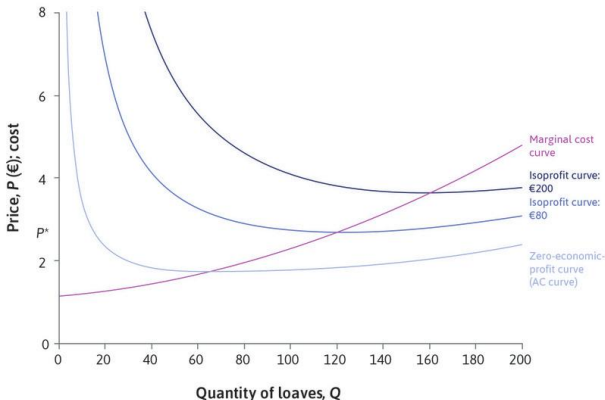
Advertising convinces consumer the product has no close substitutes

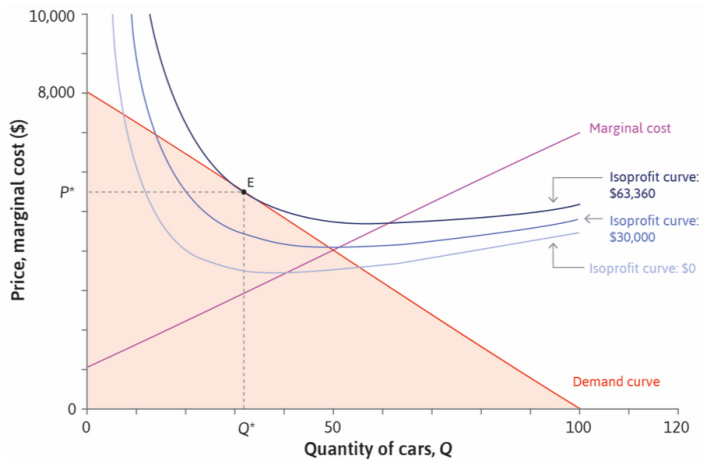
make the *demand curve steeper* or more inelastic

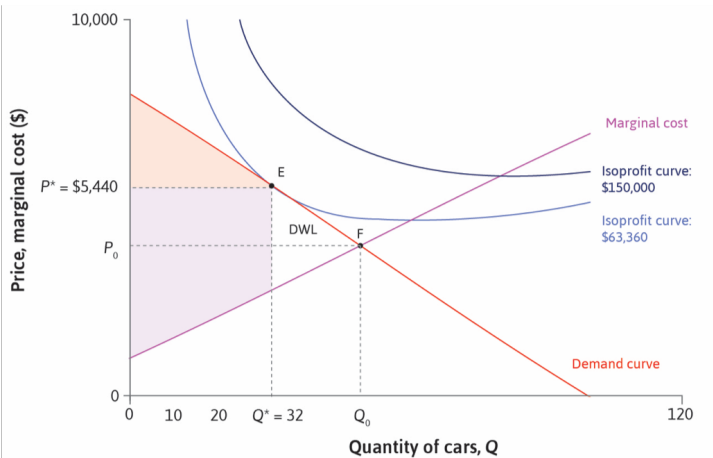
Advertising expenditure becomes a *barrier to entry*

# ISO-PROFIT LINES

$$\text{Price} = \frac{\text{Constant Profits}}{\text{Quantity}} + \text{Average Cost}$$

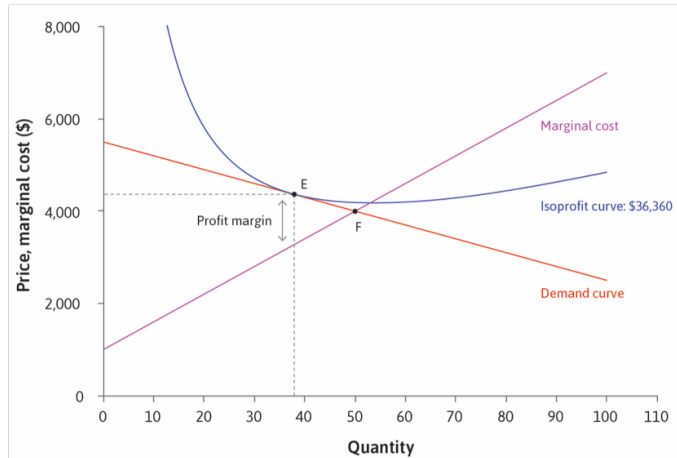






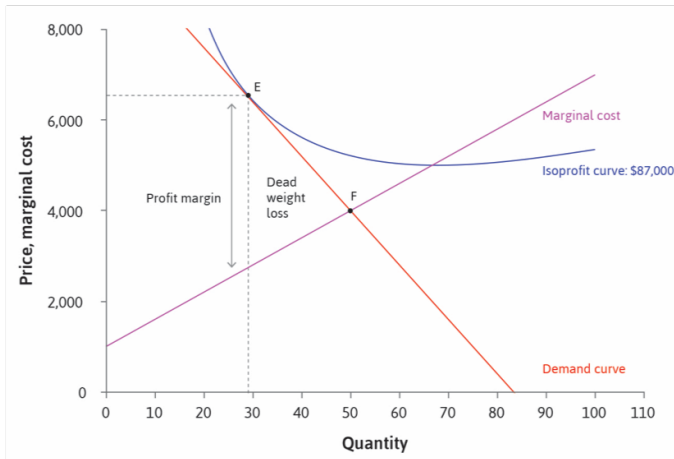
## Profit margin for an *elastic* demand curve

If demand curve is flat, firms little market power

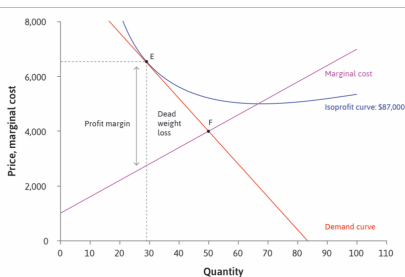
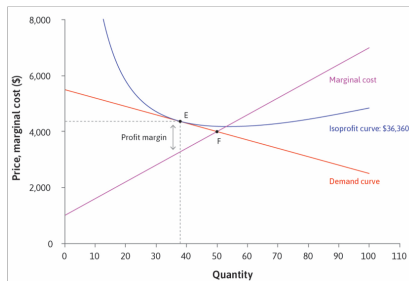


## Profit margin for an *inelastic* demand curve

If demand curve is steep, firms have more market power



The flatter (*more elastic*) the demand curve,  
the lower *firm's profit in monopolistic competition*  
lower the *dead-weight loss*





# MONOPOLISTIC COMPETITION: CONDITIONS

What if there is was *no increasing returns to scale?*

Average cost curve and marginal cost curve would be flat.

Perfectly competitive market with *no dead-weight loss* and *no profit margin*.

What if *demand curve is elastic?*

Flat demand curve tangent with iso-profit line at the point where marginal cost curve meets average cost curve

Perfectly competitive market with *no dead-weight loss* and *no profit margin*

# MONOPOLISTIC COMPETITION: MARKUP

With monopolistic competition, firms earn a profit margin above their marginal cost.

*Output per worker* is the *sum* of *real wage* paid to the worker *and real profits* retained by firms owners (*markup*).

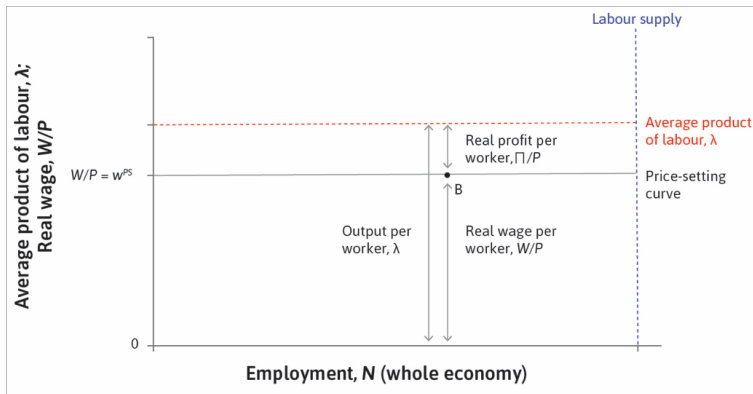
*markup* is the  $\frac{\text{Profits per unit sold}}{\text{price per unit}}$

*Intuition:* A *fixed proportion of price goes towards wage* and the *rest goes towards profits* (return on fixed cost investment).

If *return on fixed cost investment* is high, more firms enter with products that are close substitutes and drive down the return.

# PRICE-SETTING CURVE

*Price-setting curve* gives the *real wage paid* when *firms choose their profit maximising price*.



# WAGE AND PRICE SETTING CURVES

*Wage-setting curve* gives us the *real wage necessary* at each level of economy-wide employment to provide workers with *incentives to work hard*.

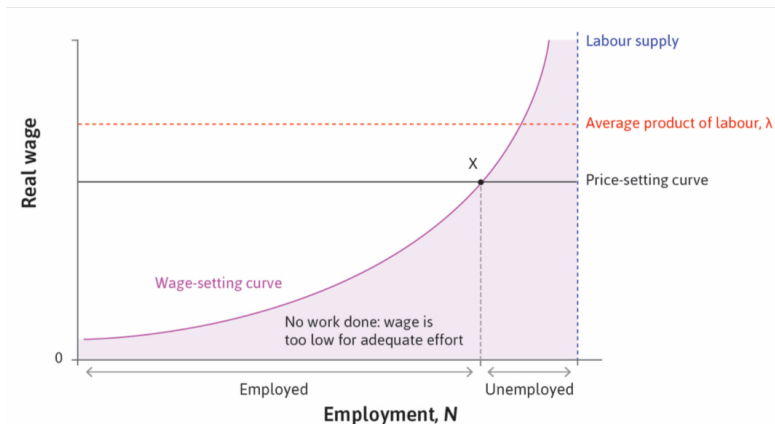
gives us the wage-unemployment locus where the worker's hidden action problem is solved

*Price-setting curve* gives the *real wage paid* when *firms choose their profit maximising price*.

gives us the wage-unemployment locus when firms in a monopolistic competitive market maximise their profits and retain a markup over their labour cost

# LABOUR MARKET EQUILIBRIUM

The *labour market equilibrium* occurs where the *wage-setting* and *price setting curves* intersect.



# LABOUR MARKET EQUILIBRIUM

Firms are *maximising their profits*

The firms are *offering the least wage to ensure workers' exert effort*

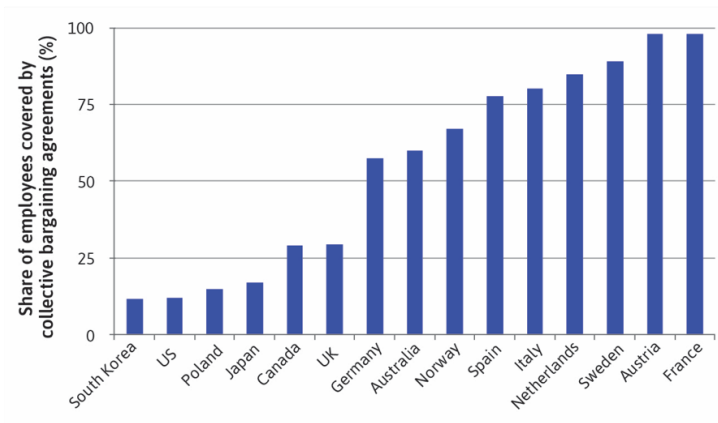
Employment is the *highest* it can be, *given the wage*

*Employed* cannot improve their situation by asking for higher pay or working less hard

*Unemployed* would like to work but cannot persuade firms to hire them by accepting lower wage due to labour discipline concerns

# LABOUR UNIONS

Labour unions negotiate rates of pay and conditions of employment for its members



# WAGE BARGAINING

When workers are organised into *trade unions*, the *wage* is not set by the employer but instead is *negotiated between union and firm*.

The bargained wage can be *above the wage-setting curve*

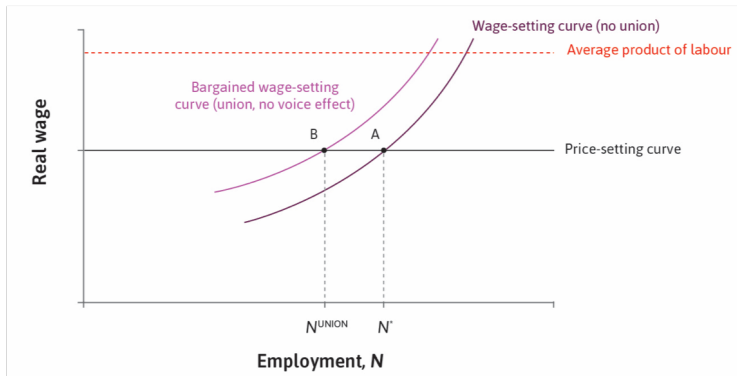
the wage-setting curve is about the *employer's threat of firing a worker*

the union can *threaten to dismiss the employer by going on strike*



# BARGAINING CURVE

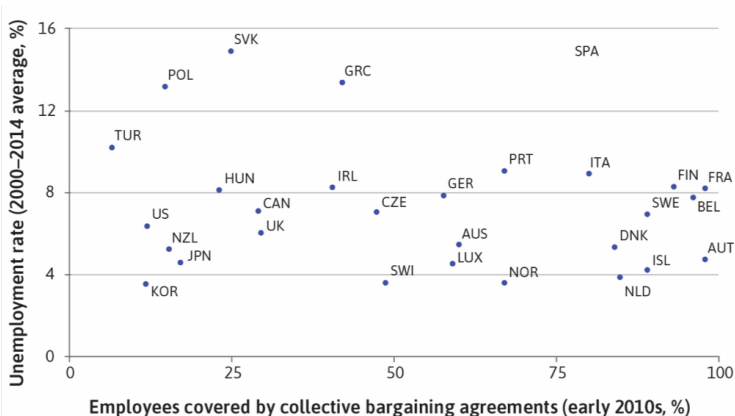
*Bargained wage-setting curve:* At every employment level, the wage negotiated by the union and the employer



Wage constant, but employment and firm's profit lower with unions

# LABOUR UNIONS AND UNEMPLOYMENT

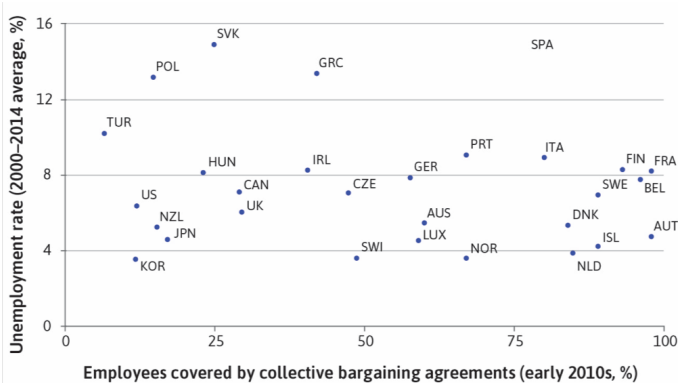
- *Model:* Unions increase unemployment rates.
- *Data:* Unemployment unionisation relationship is ambiguous.



# LABOUR UNIONS AND UNEMPLOYMENT

*UK versus Sweden*

*France versus Spain*



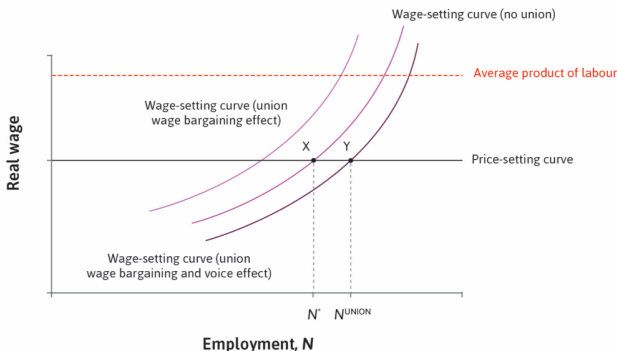
# THE UNION VOICE EFFECT

*Union bargaining:* wage curve shifts up

*Union bargaining + voice effect:* wage curve shifts down

*Voice effect:* Worker with voice exert higher effort for given wage

Employment effect of unionisation is *ambiguous*



# SUMMARY

Behaviour of firms determines wages and employment in an economy

The *wage-setting curve* tracks the combinations of wages and unemployment feasible with workers' effort

The *price-setting curve* determines the real wage corresponding to profit-maximising price

*Labour unions* bargain over wages with firms, which affects employment

Voice to workers may improve their effort and productivity