

Siena, 26/27 gennaio 2010

**Cambiamenti nella distribuzione  
funzionale del reddito in Italia e in  
Europa**

*Antonella Stirati*

*Università Roma Tre*

# General approach to the analysis

- No necessary functional relation between distribution and ‘factor’ proportions (no decreasing factor demand functions)
- Distribution explained by ‘bargaining position’ of parties, in turn depending on economic and institutional factors (see Levrero & Stirati 2006)
- Employment explained according to Keynesian principle of effective demand extended to the long run

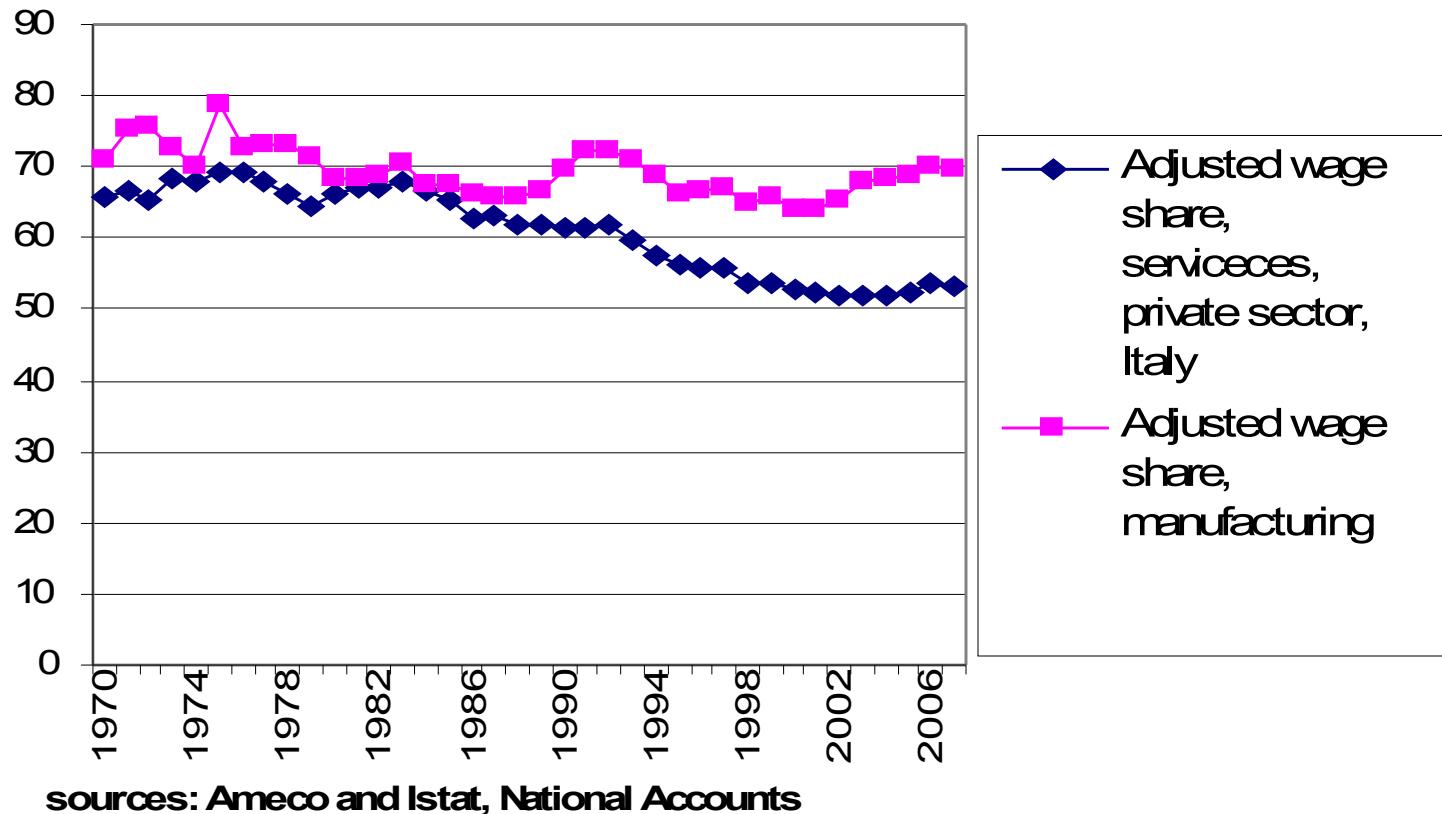
# Objects of the analysis

- Change in aggregate income shares and real wage trends
- Differences across sectors: the wage share declines most in ‘protected’ industries, beginning in the 1980s
- Change in relative prices: manufacturing declines vis à vis services and cost of living index

## **Points in the following discussion:**

- 1) accounting decomposition of changes in the wage shares in manufacturing and business sector services
- 2) some elements concerning the causes of changes in relative prices between the two sectors above
- 3) some statistical evidence concerning the factors underlying the changes in real wage trends over time
- 4) Some international comparison concerning the changes in relative prices

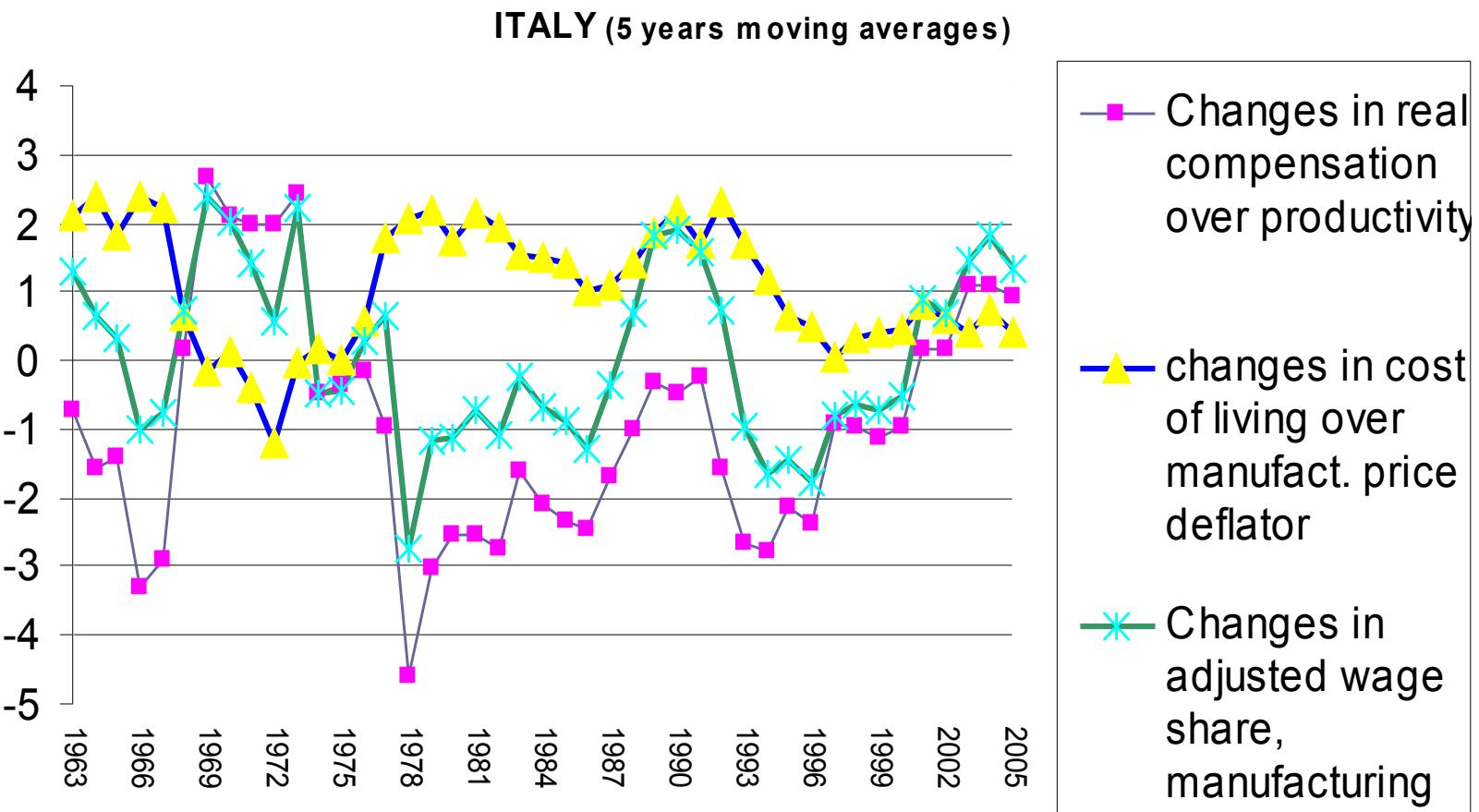
**Figure 1. Adjusted wage shares, manufacturing and business sector services, Italy**



## Scomposizione contabile della quota dei salari

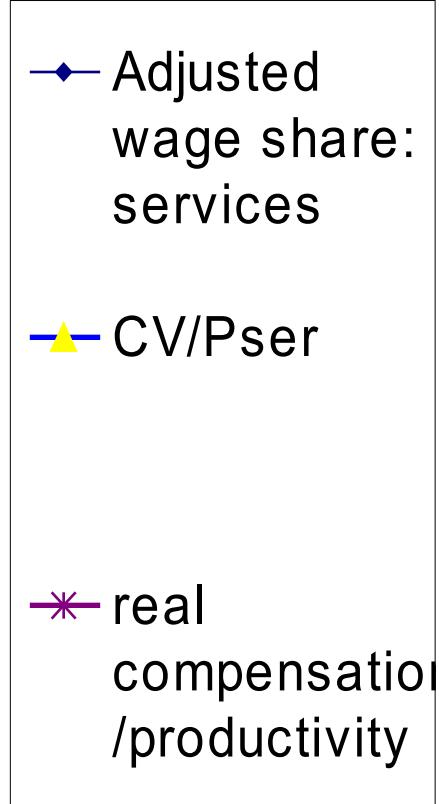
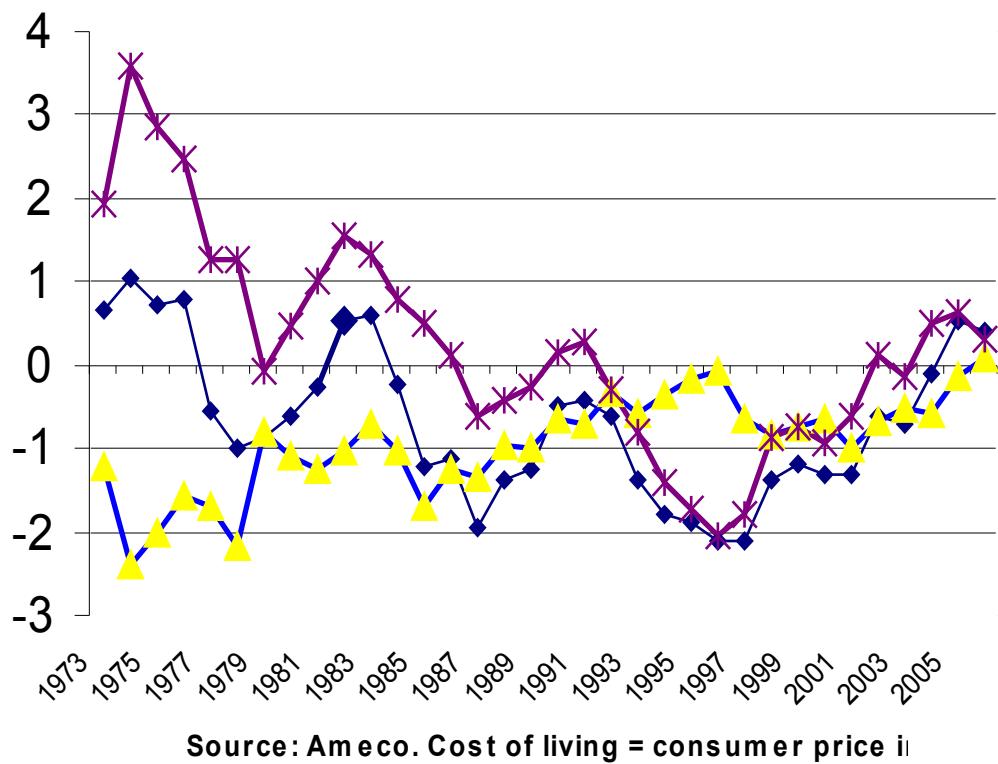
- $Q_{li} = w_i L_{ti} / VA_i$
- $L_{ti} / VA_i = 1 / \pi_i P_i$
- $w_{ri} = w_i / P_w$
- $Q_{li} = (w_{ri} / \pi_i) P_w / P_i$
- Var %  $Q_{li} = \text{var \% } w_{ri} / \pi_i + \text{var \% } P_w / P_i +$   
+ “residual”

**Figure 2. Contribution of real compensation over productivity and cost of living over price deflator to changes in wage share - manufacturing**

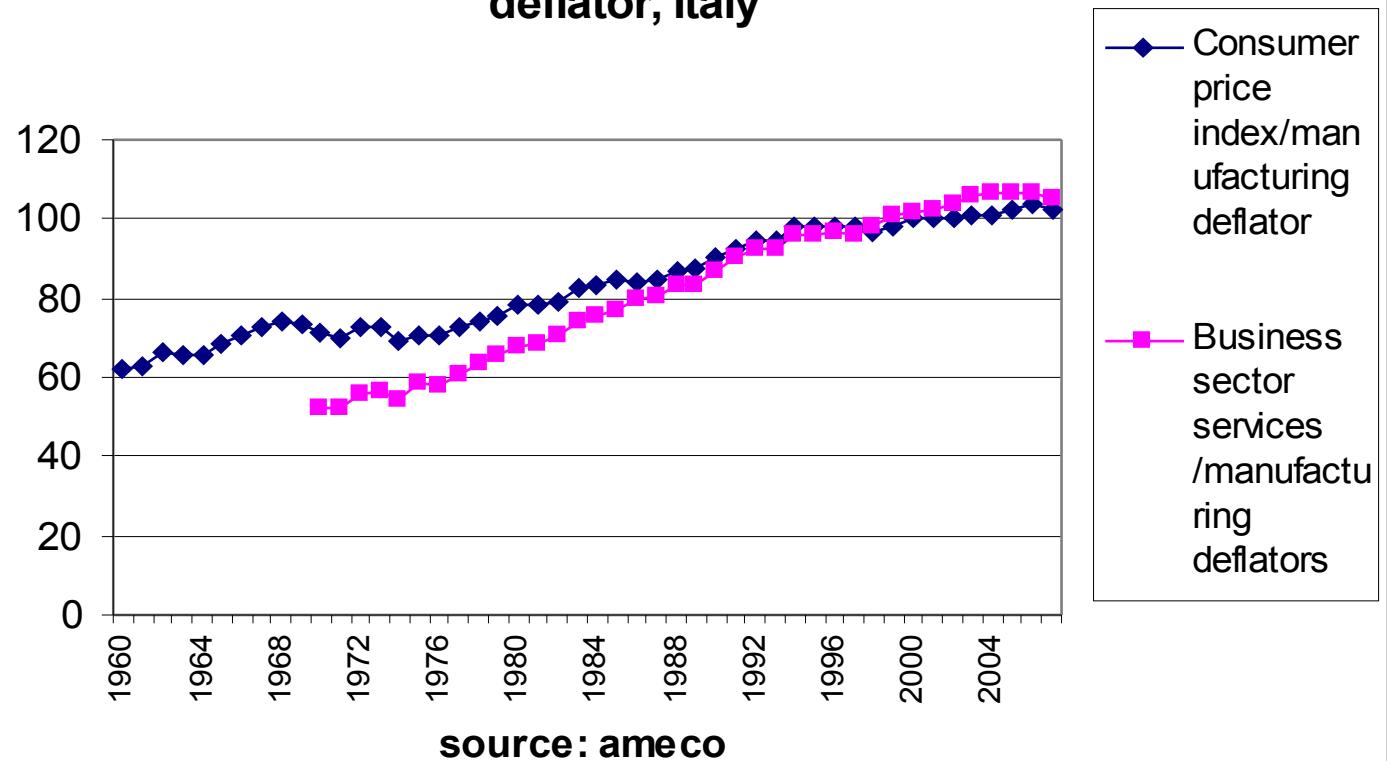


**Source: Ameco. Cost of living = consumer price index**

**Figure 3. Contribution of real compensation over productivity and  
of living over price deflator to changes in wage share - private  
services, ITALY(5 years moving averages)**

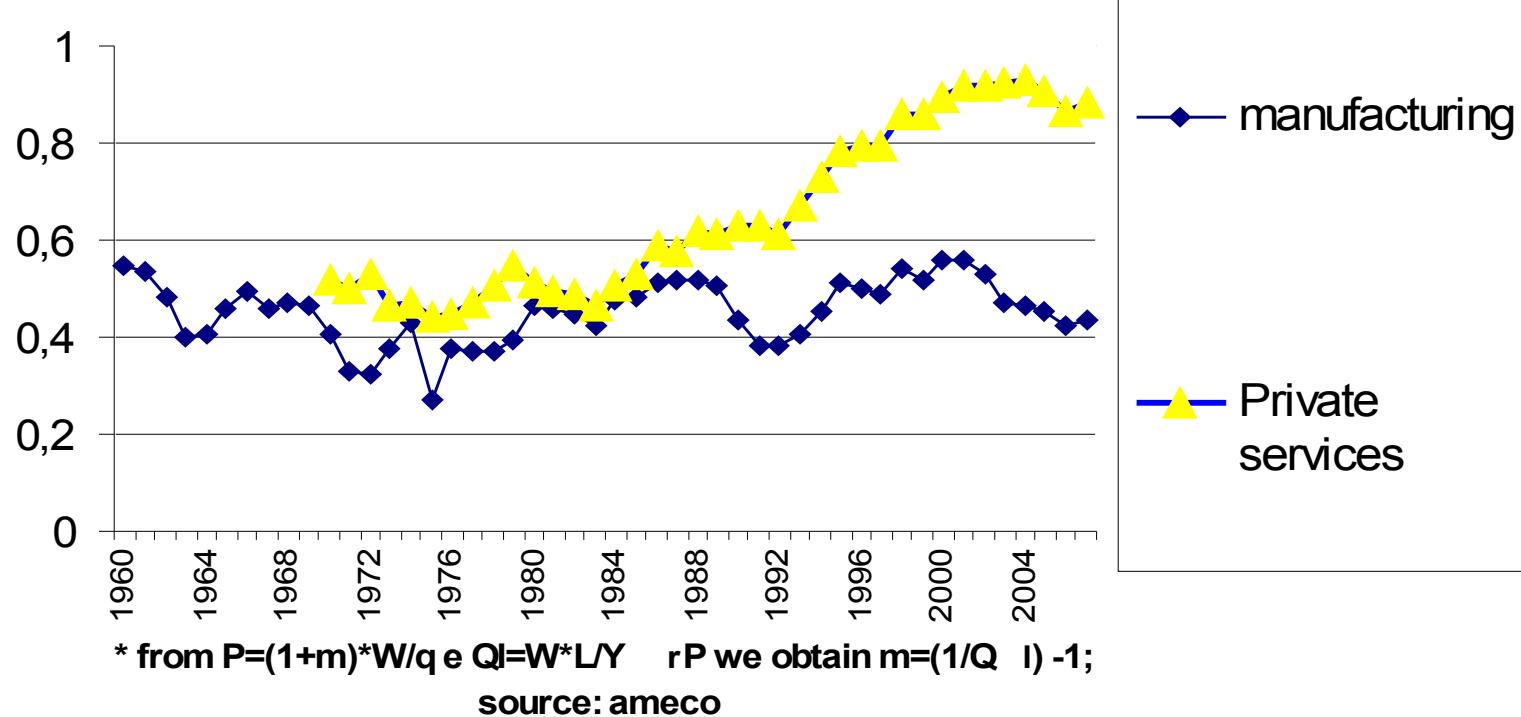


**Figure 4. Consumer price index and business sector service deflator over manufacturing deflator, Italy**



## Not just a ‘Baumol effect’....:

**Figure 5 - margini lordi\* sul costo del lavoro per unità di prodotto**



## Suggested interpretation

- The fall in  $P_i/P_s$  is one element, along with labour market and institutional factors, contributing to real wage stagnation since manufacturing is the “leading sector” in wage determination
- In contrast to what usually maintained in the Italian debate the change in relative prices *may* not be due *only* to monopoly “rents” in protected industries but to:
  - **Real appreciation of exchange rate and pressure from emerging economies in product markets**
  - **Privatizations**

# Explanation 1: appreciation of real exchange rate

- Italy has always had an “inertial” inflation higher than core European countries. Every Real appreciation of the exchange rate forces a reduction of price increases *first* in the sector exposed to international competition in product markets (manufacturing). This tends to determine a change in relative prices and re-distribution of profits between sectors

# Sectoral interdependences and rates of profit

Formally:

Money prices:

$$P_i = Wl_i + (1+r_i) (P_i a_{ii} + P_s a_{si})$$

$$P_s = Wl_s + (1+r_s) (P_i a_{is} + P_s a_{ss})$$

Numeraire:

$$P_w = \alpha_i P_i + \alpha_s P_s; \quad p_i = P_i / P_w; \quad p_s = P_s / P_w$$

$$1) \quad p_i^* = [wl_i + (1+r_i^*) p_s^* a_{si}] / [1 - (1+r_i^*) a_{ii}]$$

$$2) \quad p_s^* = [wl_s + (1+r_s^*) p_i^* a_{is}] / [1 - (1+r_s^*) a_{ss}]$$

If “external pressures” determine a reduction of the rate of growth of  $P_i$  and  $P_i/P_s$  falls, then  $p_s$  rises and  $p_i$  falls – with *given w* in equation 2) this implies  $r_s > r_s^*$  and vice versa in eq 1)

## Explanation 2: Privatizations

- Data show that sectors in which profitability and relative prices have been growing most are Transports, Energy production, Banks, all of which have seen processes of privatization. Such processes require the emergence of a profit rate on capital, which before could be absent, or lower than in the private sector. This also, with a given real wage, redistributes profits across sectors.

# Privatizations cont'

Formally:

- $P_i = 1$  : numeraire;

Hp: service industry public:  $r_s = 0$

$$1) p_s = (wl_s + a_{is}) / (1 - a_{ss})$$

If service industry becomes privatized:

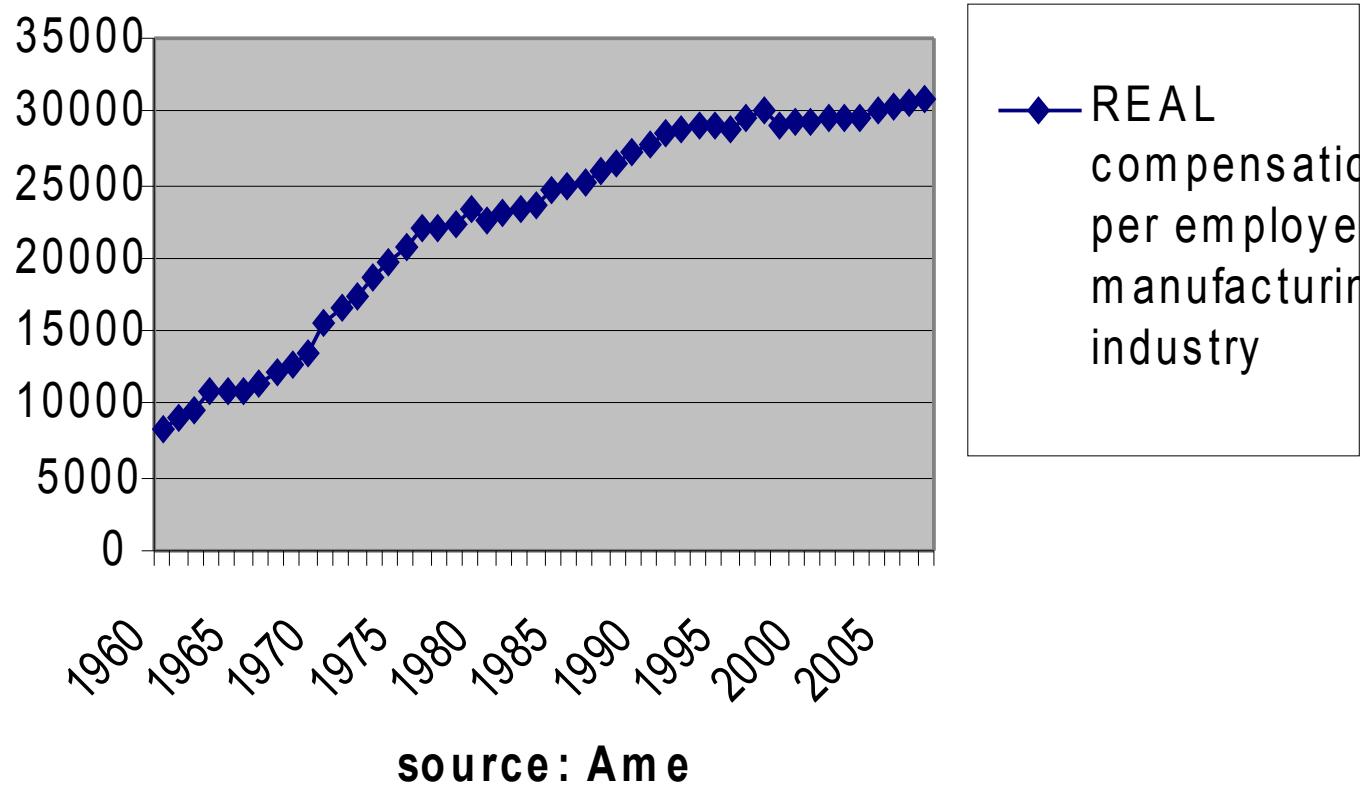
$$2) p_s' = [wl_s + a_{is} (1+r_s)] / [1 - a_{ss} (1+r_s)]$$

- Hence clearly with w given in terms of the numeraire,  $p_s' > p_s$

$$3) p_i = 1 = wl_i + (a_{ii} + p_s a_{si})(1+r_i)$$

- With w given in terms of numeraire, an increase in  $p_s$  must involve a fall in  $r_i$  in eq 3)

## REAL compensation per employee: manufacturing Italy



**TABLE 1****DEPENDENT VARIABLE:growth rate of REAL COMPENSATION°****MANUFACTURING**

		Intercep	Un*	Empl <sup>○</sup>	PR/CP	Short term <sup>†</sup>	69 <sup>○○○</sup>	79	93-95	Ad	R-sq	F
<b>Eq 1</b>	<b>Coef</b>	<b>8,1</b>	<b>-0,7</b>	<b>0,6</b>						<b>0,67</b>	<b>46,5</b>	
	<b>t</b>	<b>7,8</b>	<b>-5,3</b>	<b>3,8</b>								
<b>Eq 2</b>	<b>Coef</b>	<b>4,9</b>	<b>-0,44</b>	<b>0,5</b>	<b>0,4</b>					<b>0,77</b>	<b>49,2</b>	
	<b>t</b>	<b>4,2</b>	<b>-3,5</b>	<b>3,7</b>	<b>4,2</b>							
<b>Eq 3</b>	<b>Coef</b>	<b>4,3</b>	<b>-0,3</b>	<b>0,7</b>	<b>0,3</b>	<b>-0,13</b>				<b>0,79</b>	<b>43</b>	
	<b>t</b>	<b>3,9</b>	<b>-1,9</b>	<b>4,6</b>	<b>2,8</b>	<b>-2,5</b>						
<b>Eq 4</b>	<b>Coef</b>	<b>4,5</b>	<b>-0,3</b>	<b>0,7</b>	<b>0,3</b>	<b>-0,15</b>	<b>1,4</b>	<b>-3</b>	<b>0,14</b>	<b>0,81</b>	<b>28,3</b>	
	<b>t</b>	<b>4</b>	<b>-1,9</b>	<b>4,8</b>	<b>2,3</b>	<b>-2,9</b>	<b>1,1</b>	<b>-2</b>	<b>0,2</b>			

°Real compensation per employee (FTE), 3 years moving average of annual growth rate

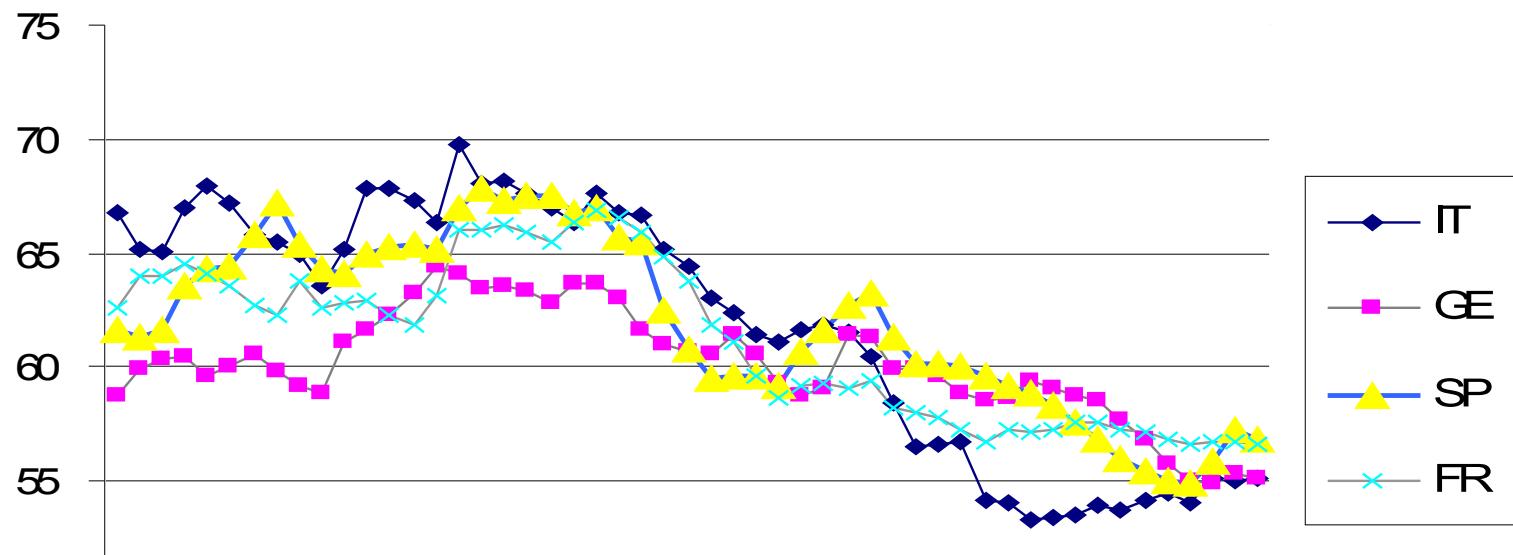
\* Eurostat definition, 3 years moving average of the level

○○ employment growth in manufacturing, three years moving average

\*\*% of short term contracts over employees, entire economy, three years moving average. Series starts in 94, assum

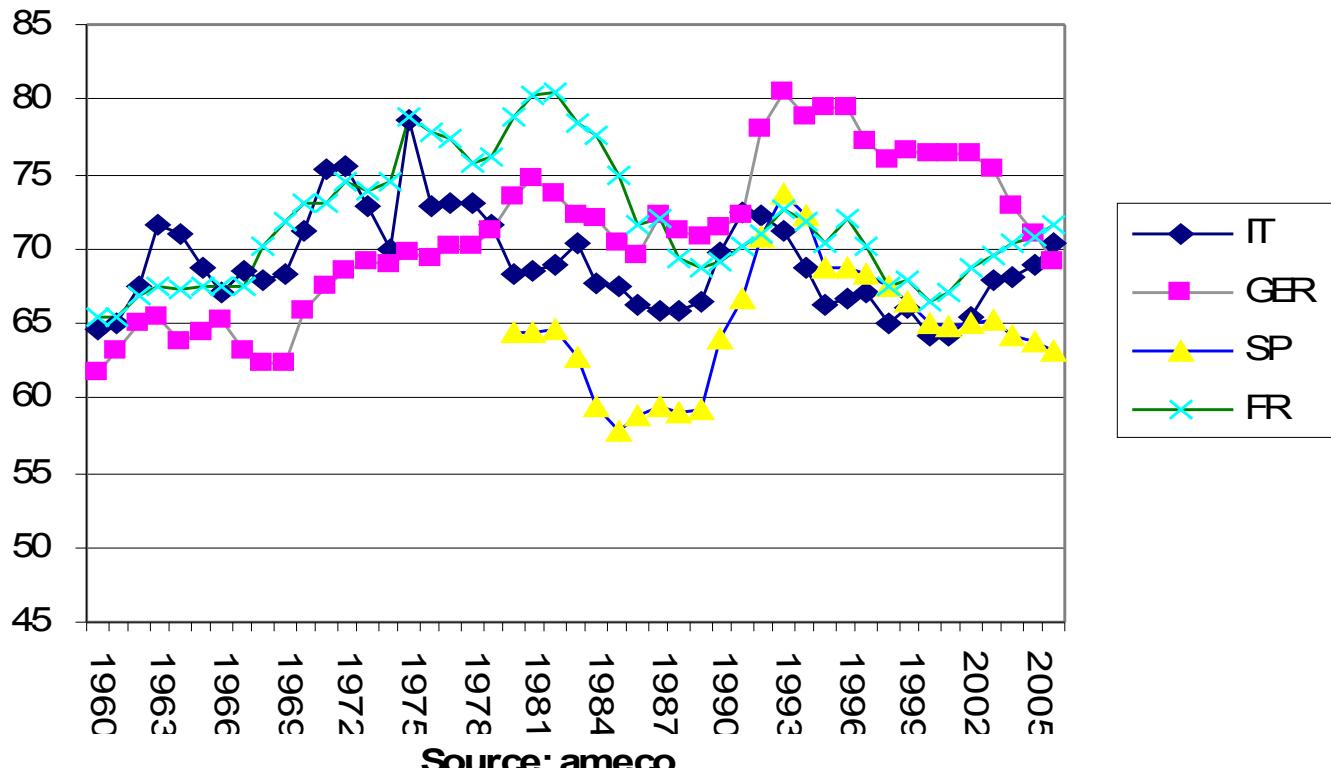
○○○all dummies assume value 1 in the years indicated, 0 otherwise

**Figure 6. Adjusted wage share, total economy**

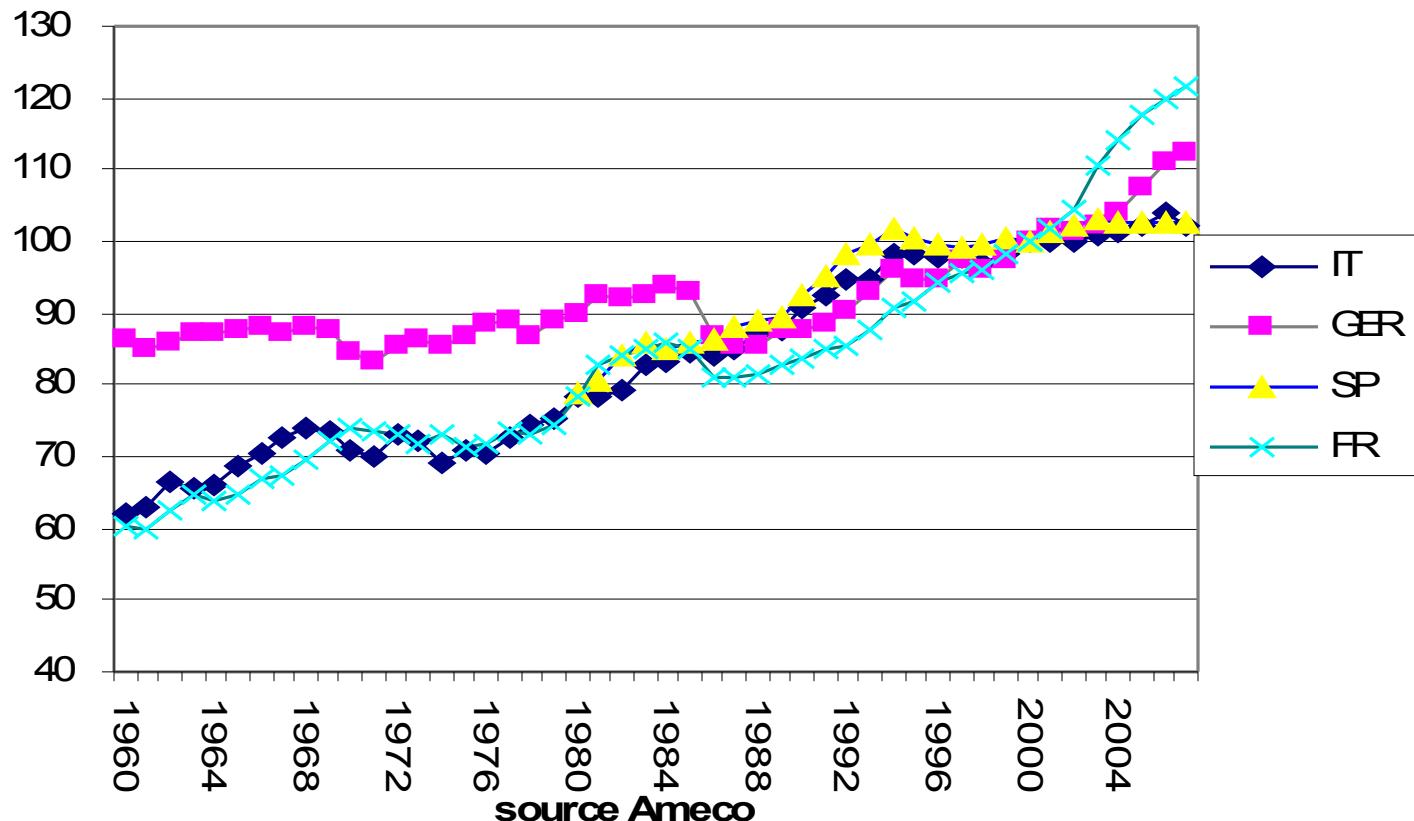


source: ameco

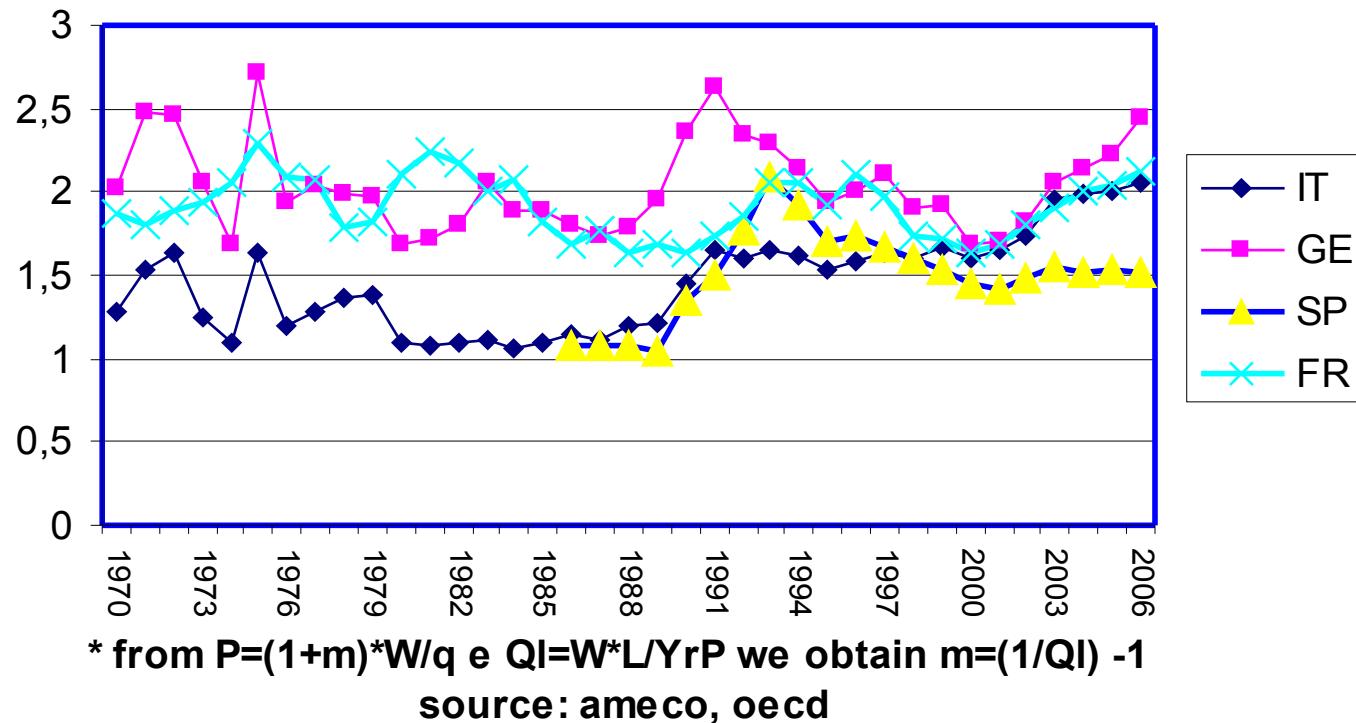
**figure 7. Adjusted wage share,  
manufacturing**



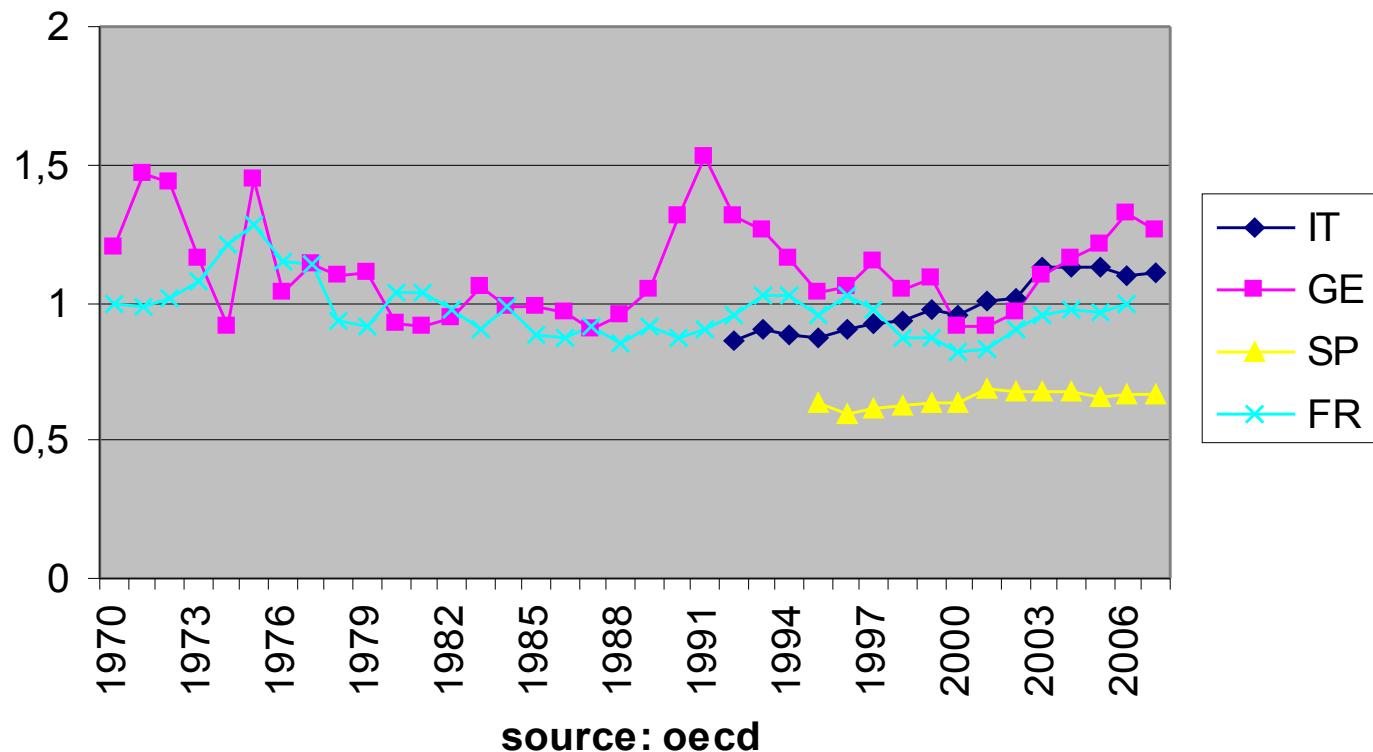
**Figure 7. National consumer price index  
over manufacturing deflator**



**Figure 8 - proportion of margins\* in business sector services and manufacturing**



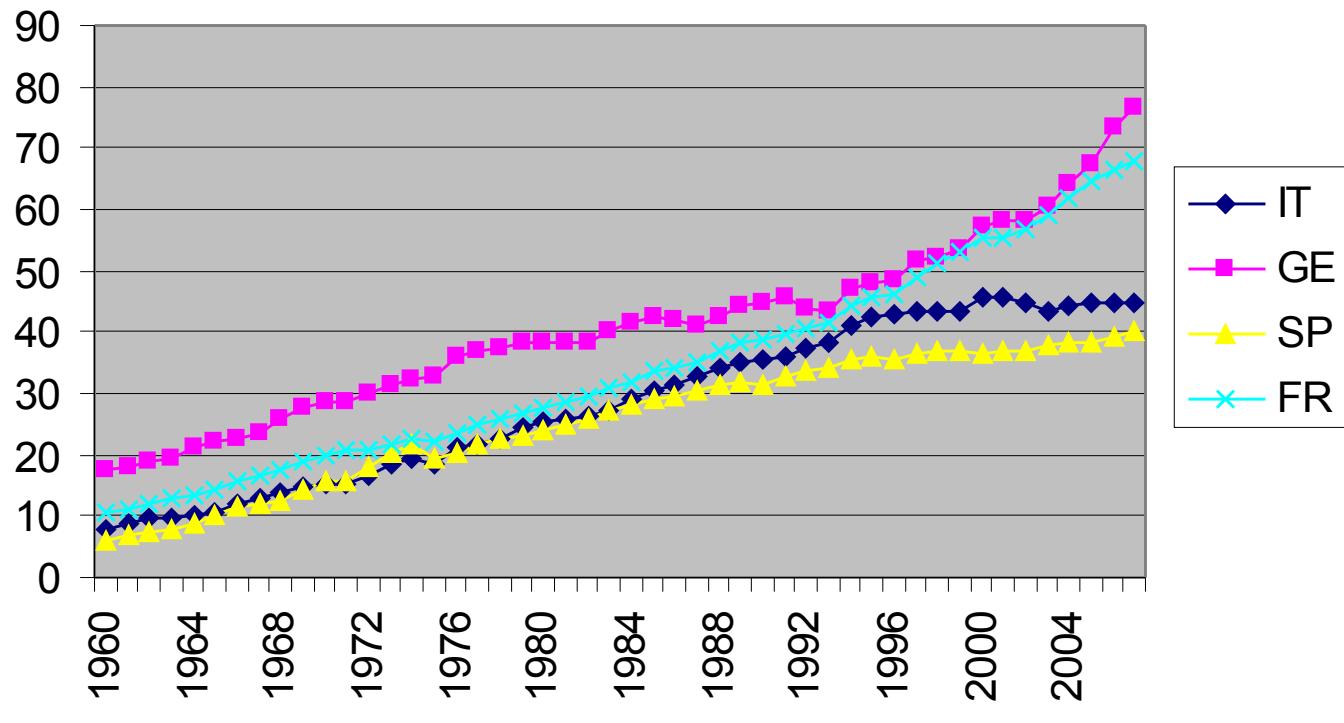
**Figure 9 - Proportion of margin in business sect.  
services excluding real estate and manufacturing**



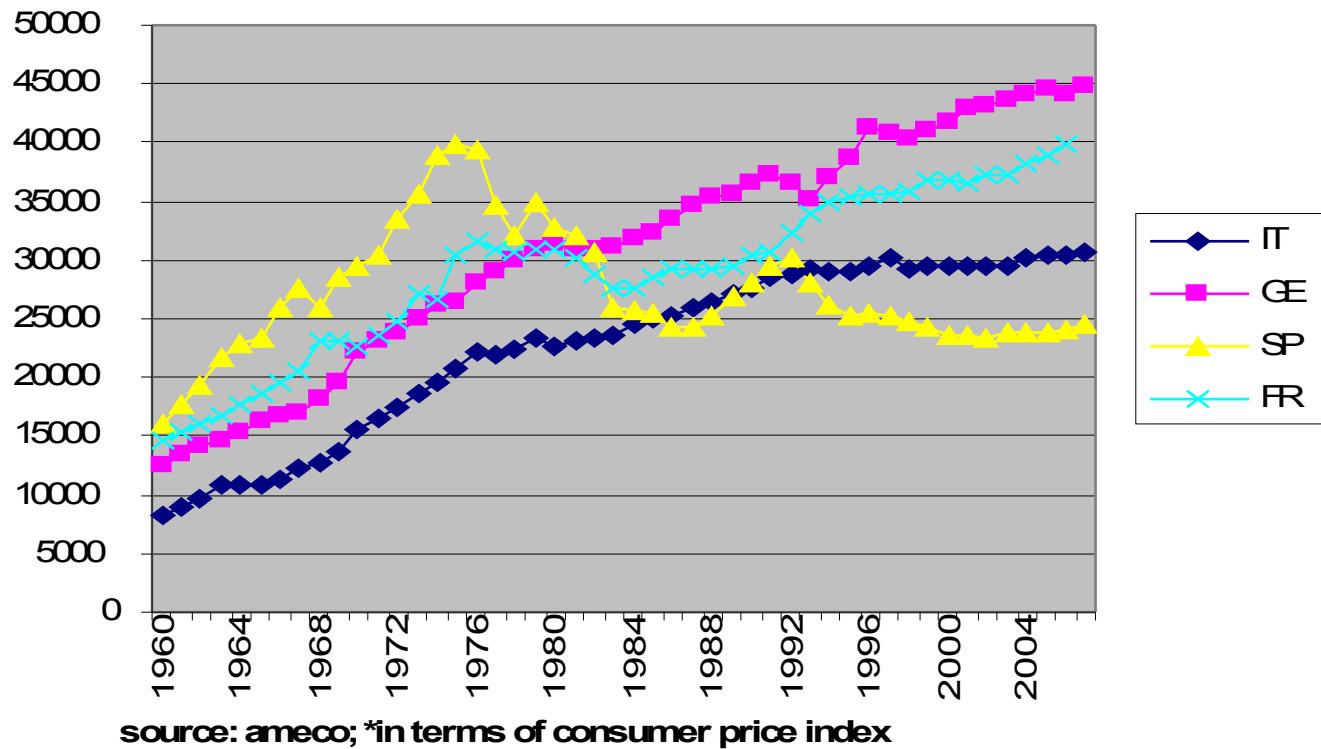
# conclusioni

- L'andamento dei salari reali e delle quote distributive è fortemente legato a andamento del mercato del lavoro e fattori istituzionali.
- Un ulteriore elemento che pesa sulla capacità di contrattazione nel settore manifatturiero è la variazione tra i prezzi relativi dell'industria e dei servizi
- Questo cambiamento si verifica nei principali paesi europei, ma in misura molto meno marcata in Germania; inoltre solo in Italia si accompagna ad un trend crescente dei margini sul costo del lavoro per unità di prodotto nei servizi privati rispetto alla manifattura – questo sembra rafforzare la tesi che l'apprezzamento reale del cambio abbia un ruolo nel determinare questo andamento
- I meccanismi spontanei messi in atto dalla crisi vanno certamente nella direzione di un peggioramento della posizione dei lavoratori. Solo la politica e la politica economica possono operare per un miglioramento della distribuzione

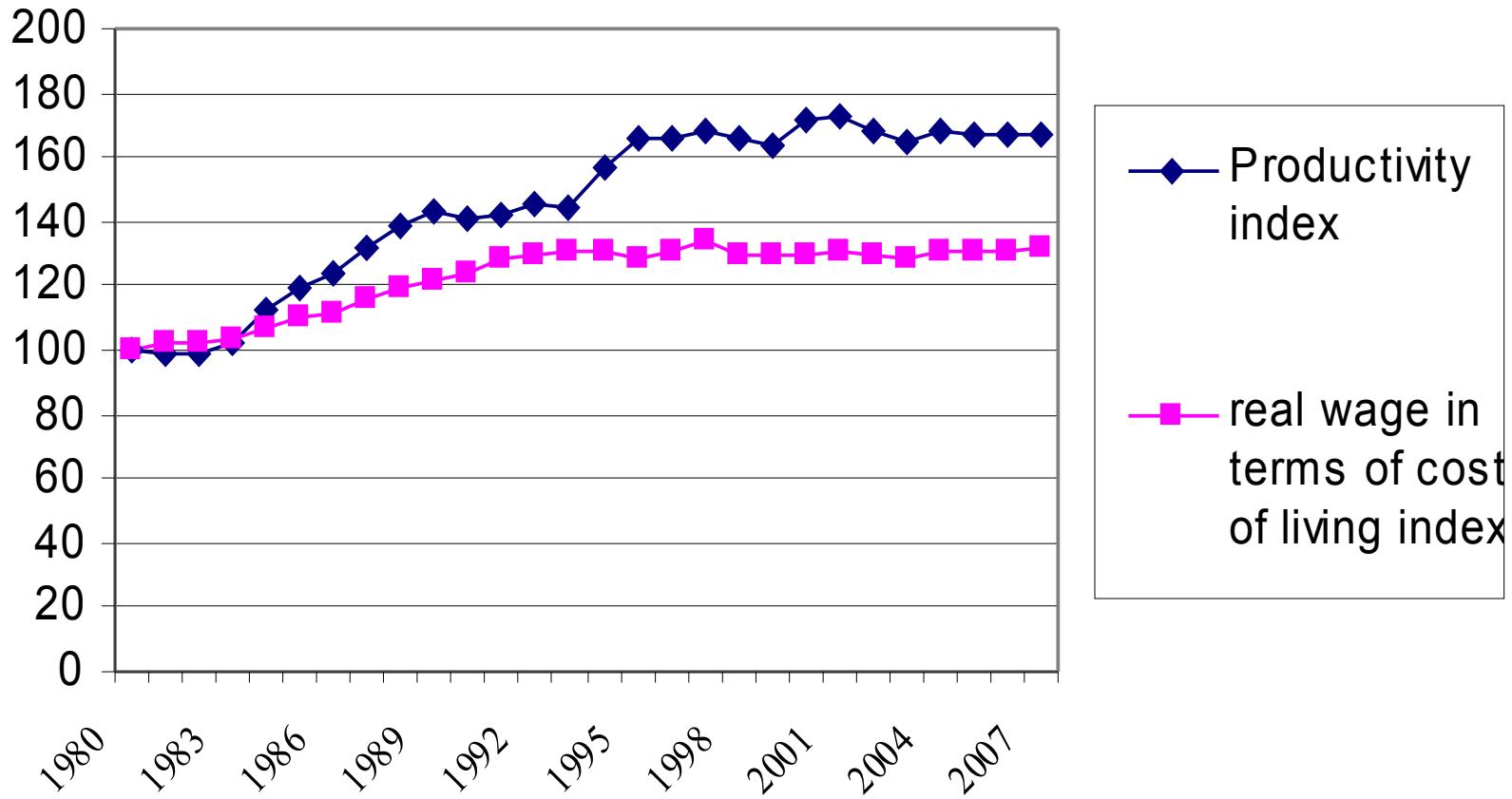
**Figure 11. Gross value added per person employed\* at constant prices, manufacturing**



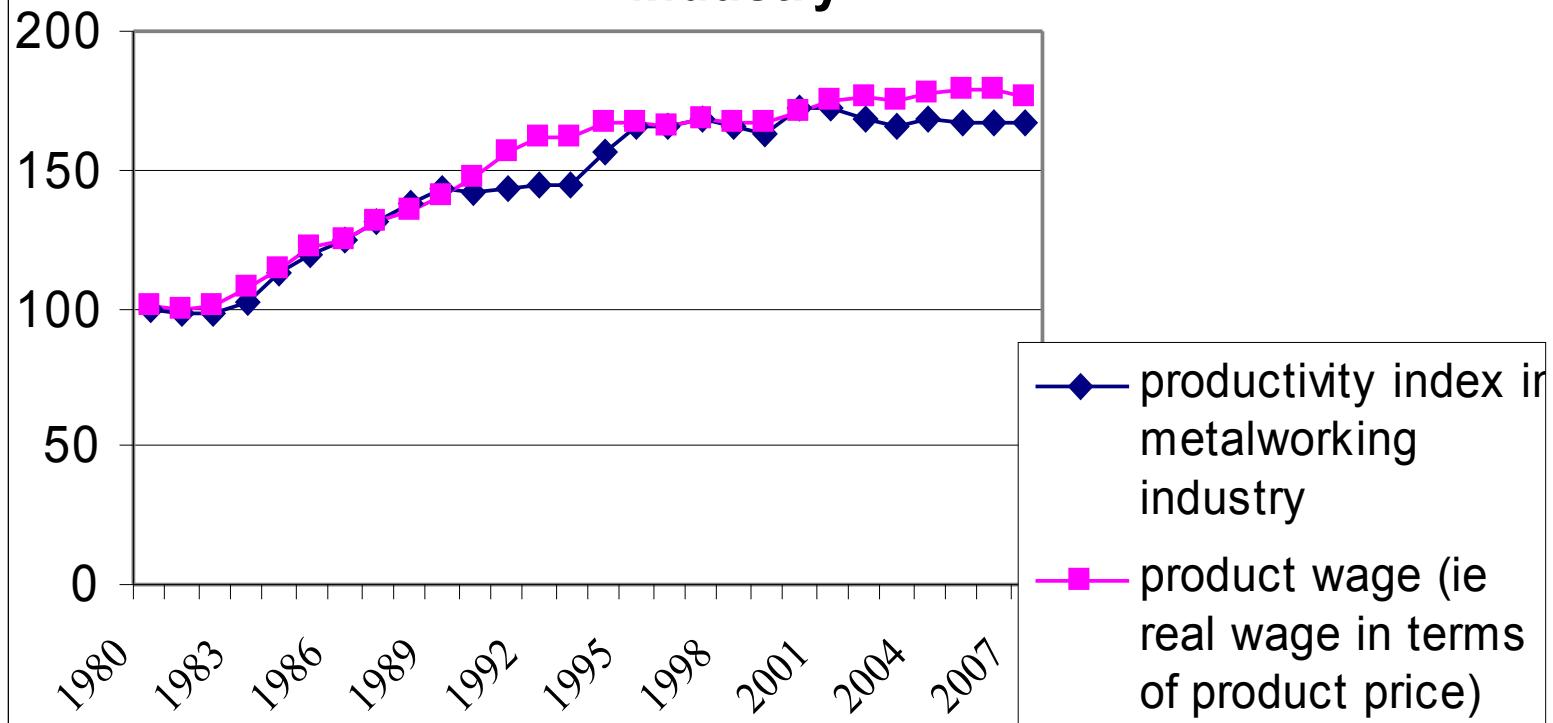
**Figure 12. Real compensation\* per employee, manufacturing**



# Productivity and real wage in metalwork industry



## **productivity and product wage in metalworking industry**



**data source: Istat, conti economici nazionali**

## Gross ex post rate of profit on fixed assets

