

Empirical Estimates of Cobb-Douglas Production Functions

$$Q = AL^\alpha K^\beta$$

Industry(Country)	$\hat{\alpha}$	$\hat{\beta}$	$\hat{\eta}_{L \cdot w}^2 = \frac{-\beta}{\alpha+\beta}$	$\hat{\eta}_{L \cdot Q} = \frac{1}{\alpha+\beta}$
Foods (U.S.)	0.72	0.35	-0.37	0.93
Metals & Machines (U.S.)	0.71	0.26	-0.27	1.03
Cotton (India)	0.92	0.12	-0.12	0.96
Jute (India)	0.84	0.14	-0.14	1.02
Coal (U.K.)	0.51	0.49	-0.49	1.00
Livestock (U.S.-Montana)	0.08	0.94	-0.92	0.98

Source: Table 6.3 in *Modern Microeconomics, Analysis and Applications*, David Hyman.

Estimated Long-Run Wage Elasticities of Labor Demand

<u>Industry</u>	<u><math>\hat{\eta}_{L,w}</math></u>
Coal mining	
Underground	-0.98
Surface	-0.86
Manufacturing	-0.29
Retail Trade	-0.34 to -1.20
State & Local Gov't	
Employees in Education	-1.06
Non Education	-0.38

Source: Table 4.1 in *Modern Labor Economics: Theory and Public Policy*, Fourth ed., Ehrenberg & Smith.

Estimated Elasticities of Substitution

$$\sigma = \frac{\% \Delta(K/L)}{\% \Delta(w/r)} = \frac{d \ln(K/L)}{d \ln(w/r)}$$

Industry	$\hat{\sigma}$
Petroleum, natural gas	1.71
Agriculture	1.20
Coal Mining	0.93
Publishing, printing	1.21
Iron & Steel	1.00
Apparel	0.42
Trade	1.12
Electric Power	0.82

Source: Table 5.7 in *Intermediate Microeconomics*, Heintz Kohler.

note:  $\sigma < 1 \Rightarrow$  labor's share of cost/income rises when  $w/r \uparrow$

$\sigma = 1 \Rightarrow$  labor's share of cost/income remains constant when  $w/r \uparrow$

$\sigma > 1 \Rightarrow$  labor's share of cost/income falls when  $w/r \uparrow$