

## Sixth Lecture

# Profit and Capital Accumulation

### **Business organization**

- Proprietorship
- Partnership
- Corporation
- Why do corporations dominate capitalism?
- Economies of scale, risk, power

### **Financial statements**

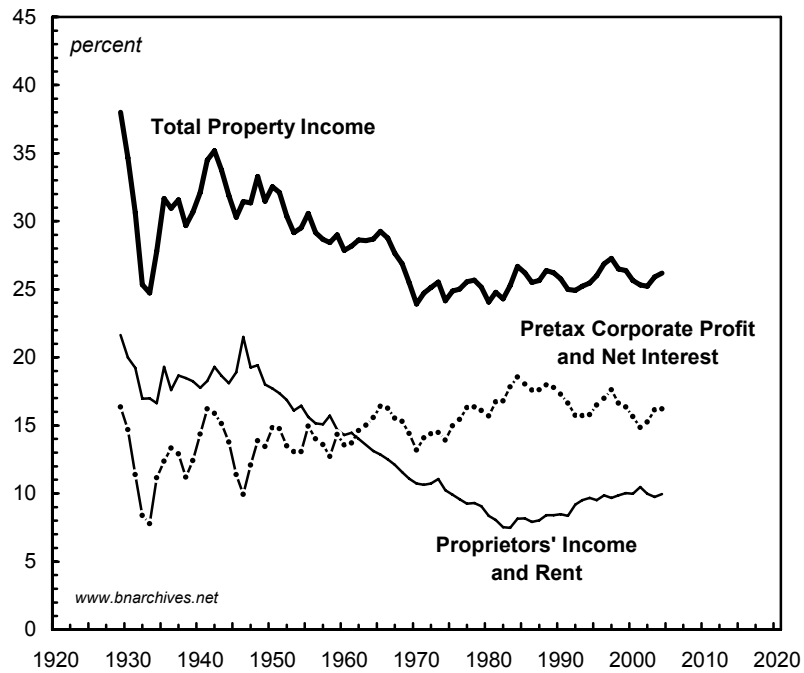
- Balance sheet assets: “tangible,” “intangible”
- Balance sheet liabilities: debt, equity
- Does the balance sheet balance?
- Creditors and owners
- Income statement: revenue, costs, profit
- Depreciation and amortization – art or con-art?
- Interest, taxes and net profit
- Retained earnings and dividends

### **The rate of profit and capital accumulation**

- Measures of capital: historical cost, replacement cost, market value
- Rate of profit or *rates* of profit?
- How does capital accumulate: backward or forward looking?
- Market value versus fixed assets

### **Determinants of the profit rate**

- Efficiency and intensity of labour
- Prices vs. “quantities”
- Capacity utilization
- The profit rate and conflict



**FIGURE 1** Property Income in the United States (Share of National Income)

SOURCE: U.S. Bureau of Economic Analysis through Global Insight. (Series codes YN for national income; YPPROPADJ for proprietors' income; YPRENTADJ for rent; ZBECON for pretax corporate profit; INTNETAMISC for net interest.)

## General Electric GE

10-Yr Income    10-Yr Cash Flows    **10-Yr Balance Sheet**    5-Yr Restated    Quarterly Results

Balance Sheet											As originally reported
Assets \$Mil											
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	latest Qtr
Cash and Equiv	2,823.0	4,191.0	5,861.0	4,317.0	8,554.0	8,195.0	9,082.0	8,910.0	12,664.0	15,328.0	12,894.0
Short-Term Investments	41,067.0	59,889.0	70,621.0	78,717.0	81,758.0	91,339.0	101,017.0	116,862.0	120,724.0	135,536.0	133,952.0
Accts Rec	8,735.0	8,704.0	8,924.0	8,224.0	8,531.0	9,502.0	9,590.0	10,681.0	10,732.0	14,233.0	326,318.0
Inventory	4,395.0	4,473.0	5,895.0	6,049.0	7,007.0	7,812.0	8,565.0	9,247.0	8,752.0	9,778.0	10,501.0
Other Current Assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total Current Assets</b>	<b>57,020.0</b>	<b>77,257.0</b>	<b>91,301.0</b>	<b>97,307.0</b>	<b>105,850.0</b>	<b>116,848.0</b>	<b>128,254.0</b>	<b>145,700.0</b>	<b>152,872.0</b>	<b>174,875.0</b>	<b>483,665.0</b>
Net PP&E	25,679.0	28,795.0	32,316.0	35,730.0	41,022.0	40,015.0	42,140.0	47,204.0	53,382.0	63,334.0	64,774.0
Intangibles	13,342.0	16,007.0	19,121.0	23,635.0	26,010.0	27,441.0	31,649.0	46,180.0	55,025.0	83,240.0	85,477.0
Other Long-Term Assets	131,994.0	150,343.0	161,274.0	199,263.0	232,318.0	252,702.0	292,980.0	336,160.0	386,204.0	428,881.0	106,446.0
<b>Total Assets</b>	<b>228,035.0</b>	<b>272,402.0</b>	<b>304,012.0</b>	<b>355,935.0</b>	<b>405,200.0</b>	<b>437,006.0</b>	<b>495,023.0</b>	<b>575,244.0</b>	<b>647,483.0</b>	<b>750,330.0</b>	<b>740,362.0</b>
Liabilities and Stockholders' Equity \$Mil											
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	latest Qtr
Accts Payable	9,061.0	10,205.0	10,407.0	12,502.0	13,676.0	14,853.0	18,158.0	18,874.0	19,824.0	24,729.0	22,754.0
Short-Term Debt	64,463.0	80,200.0	98,075.0	115,378.0	130,346.0	119,180.0	153,076.0	138,775.0	134,917.0	157,746.0	145,870.0
Taxes Payable	---	---	---	---	---	---	---	---	---	---	---
Accrued Liabilities	5,898.0	7,086.0	8,891.0	9,788.0	11,229.0	12,219.0	14,132.0	15,577.0	15,343.0	17,539.0	---
Other Short-Term Liabilities	2,579.0	3,016.0	3,295.0	3,911.0	5,965.0	9,860.0	13,538.0	8,601.0	6,446.0	6,266.0	24,060.0
<b>Total Current Liabilities</b>	<b>82,001.0</b>	<b>100,507.0</b>	<b>120,668.0</b>	<b>141,579.0</b>	<b>161,216.0</b>	<b>156,112.0</b>	<b>198,904.0</b>	<b>181,827.0</b>	<b>176,530.0</b>	<b>206,280.0</b>	<b>192,684.0</b>
Long-Term Debt	51,027.0	49,246.0	46,603.0	59,663.0	71,427.0	82,132.0	79,806.0	140,632.0	170,004.0	213,161.0	219,609.0
Other Long-Term Liabilities	65,398.0	91,524.0	102,303.0	115,813.0	130,000.0	148,270.0	161,489.0	189,079.0	221,769.0	220,605.0	215,685.0
<b>Total Liabilities</b>	<b>198,426.0</b>	<b>241,277.0</b>	<b>269,574.0</b>	<b>317,055.0</b>	<b>362,643.0</b>	<b>386,514.0</b>	<b>440,199.0</b>	<b>511,538.0</b>	<b>568,303.0</b>	<b>640,046.0</b>	<b>627,978.0</b>
<b>Total Equity</b>	<b>29,609.0</b>	<b>31,125.0</b>	<b>34,438.0</b>	<b>38,880.0</b>	<b>42,557.0</b>	<b>50,492.0</b>	<b>54,824.0</b>	<b>63,706.0</b>	<b>79,180.0</b>	<b>110,284.0</b>	<b>112,384.0</b>
<b>Total Liabilities &amp; Equity</b>	<b>228,035.0</b>	<b>272,402.0</b>	<b>304,012.0</b>	<b>355,935.0</b>	<b>405,200.0</b>	<b>437,006.0</b>	<b>495,023.0</b>	<b>575,244.0</b>	<b>647,483.0</b>	<b>750,330.0</b>	<b>740,362.0</b>

SOURCE: Morning Star

<http://quicktake.morningstar.com/Stock/balance10.asp?Country=USA&Symbol=GE&stocktab=finance>

## General Electric GE

## Income Statement

As originally reported

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TTM
Revenue	70,028.0	79,179.0	90,840.0	100,469.0	111,630.0	129,853.0	125,913.0	131,698.0	134,187.0	152,363.0	163,260.0
COGS	30,970.0	32,871.0	40,088.0	42,280.0	45,958.0	51,823.0	49,097.0	52,856.0	51,206.0	61,759.0	66,154.0
Gross Profit	39,058.0	46,308.0	50,752.0	58,189.0	65,672.0	78,030.0	76,816.0	78,842.0	82,981.0	90,604.0	97,106.0

## Operating Expenses \$Mil

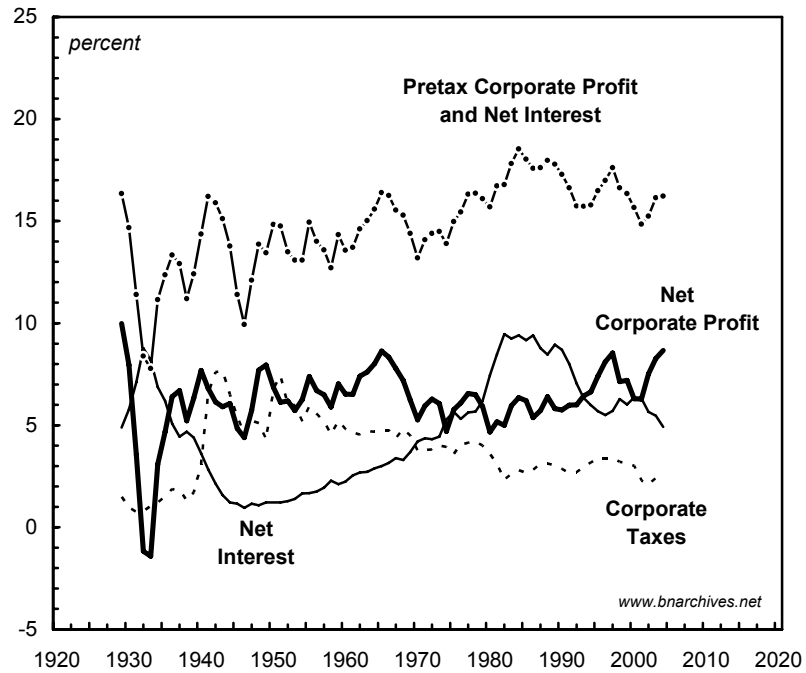
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TTM
SG&A	---	---	---	---	---	---	---	---	---	---	---
R&D	---	---	---	---	---	---	---	---	---	---	---
Other	22,035.0	27,598.0	31,189.0	34,959.0	40,082.0	47,864.0	46,053.0	49,735.0	52,645.0	58,591.0	60,981.0
Operating Income	17,023.0	18,710.0	19,563.0	23,230.0	25,590.0	30,166.0	30,763.0	29,107.0	30,336.0	32,013.0	36,125.0

## Other Income and Expense \$Mil

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	TTM
Net Int Inc & Other	(7,286.0)	(7,904.0)	(8,384.0)	(9,753.0)	(10,013.0)	(11,720.0)	(11,062.0)	(10,216.0)	(10,432.0)	(11,907.0)	(14,021.0)
Earnings Before Taxes	9,737.0	10,806.0	11,179.0	13,477.0	15,577.0	18,446.0	19,701.0	18,891.0	19,904.0	20,106.0	22,104.0
Income Taxes	3,164.0	3,526.0	2,976.0	4,181.0	4,860.0	5,711.0	5,573.0	3,758.0	4,315.0	3,513.0	4,063.0
Earnings After Taxes	6,573.0	7,280.0	8,203.0	9,296.0	10,717.0	12,735.0	14,128.0	15,133.0	15,589.0	16,593.0	18,041.0
Acctg Changes	---	---	---	---	---	---	(444.0)	(1,015.0)	(587.0)	---	---
Disc Operations	---	---	---	---	---	---	---	---	---	---	---
Ext Items	---	---	---	---	---	---	---	---	---	---	---
Net Income	6,573.0	7,280.0	8,203.0	9,296.0	10,717.0	12,735.0	13,684.0	14,118.0	15,002.0	16,593.0	18,041.0
Diluted EPS, Cont Ops\$	0.65	0.73	0.82	0.93	1.07	1.27	1.41	1.51	1.55	1.59	1.71
Diluted EPS\$	0.65	0.73	0.82	0.93	1.07	1.27	1.37	1.41	1.49	1.59	1.71
Shares	10077	9908	9811	9803	9855	9909	9934	9964	10035	10339	10579

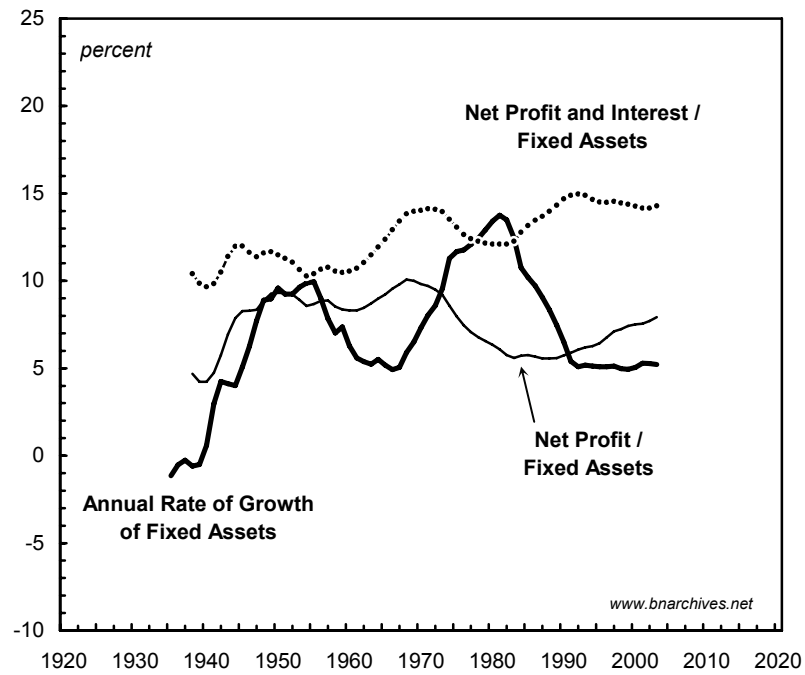
SOURCE: Morning Star

<http://quicktake.morningstar.com/Stock/income10.asp?Country=USA&Symbol=GE&stocktab=finance>



**FIGURE 2 U.S.-Based Corporations: Profit, Taxes and Net Interest (Share of National Income)**

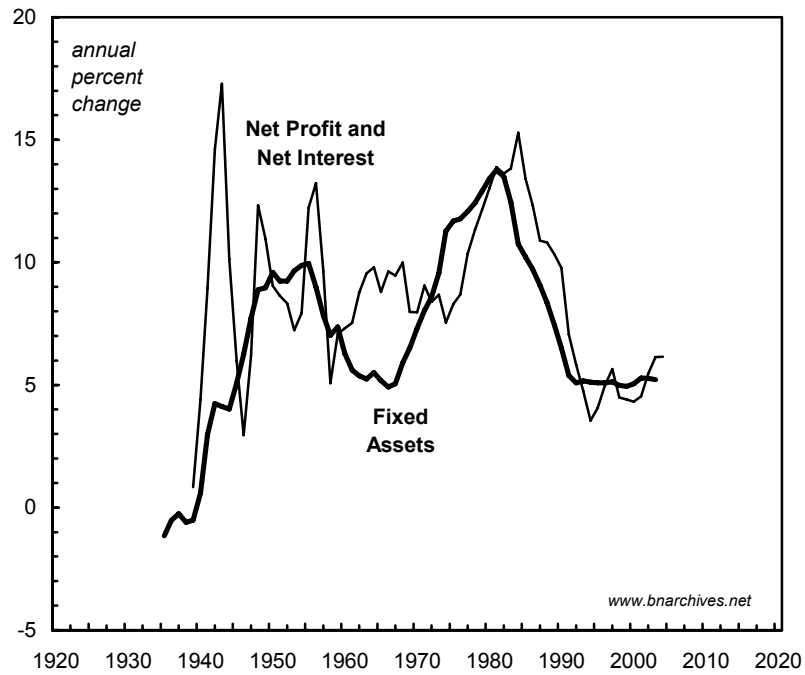
SOURCE: U.S. Bureau of Economic Analysis through Global Insight. (Series codes YN for national income; ZAECON for corporate profit after tax; TXCORP for corporate taxes; INTNETAMISC for net interest.)



**FIGURE 3 U.S.-Based Corporations: Rates of Return and the Growth of Fixed Assets**

NOTE: Series are smoothed as 10-year moving averages.

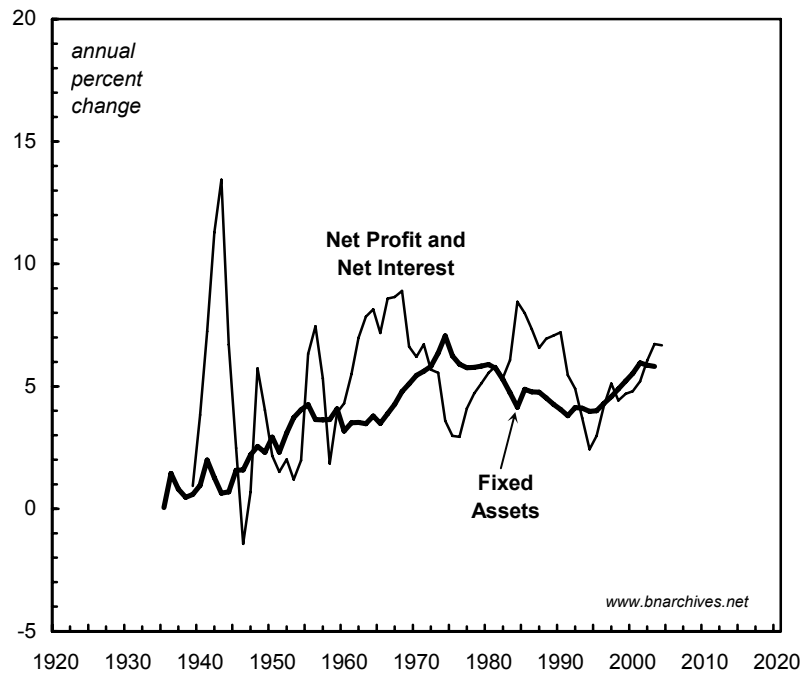
SOURCE: U.S. Bureau of Economic Analysis through Global Insight. (Series codes: FAPNREZVR for the current value of corporate fixed assets; ZAECON for net corporate profit; INTNETAMISC for net interest.)



**FIGURE 4** Growth of U.S. Corporate Income and Fixed Assets

NOTE: Series are smoothed as 10-year moving averages.

SOURCE: U.S. Bureau of Economic Analysis through Global Insight. (Series codes: FAPNREZVR for the current value of corporate fixed assets; ZAECON for net corporate profit; INTNETAMISC for net interest.)

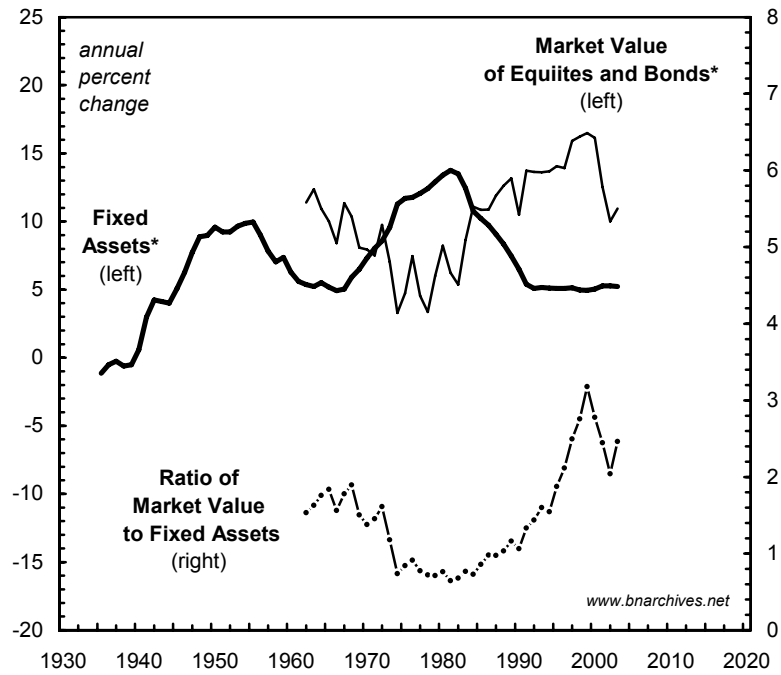


**FIGURE 5** Growth of U.S. Corporate Income and Fixed Assets (expressed in 2000 dollars)

NOTE: Series are smoothed as 10-year moving averages. Nominal dollar data are deflated by the GDP deflator of fixed nonresidential private domestic investment.

SOURCE: U.S. Bureau of Economic Analysis through Global Insight. (Series codes: FAPNREZVR for the current value of corporate fixed assets; ZAECON for net corporate profit; INTNETAMISC for net interest; PDIIFNRE for the GDP deflator for fixed nonresidential domestic investment.)





**FIGURE 6 U.S.-Based Corporations: Market Value versus Fixed Assets**

\* Series are smoothed as 10-year moving averages.

SOURCE: U.S. Bureau of Economic Analysis and U.S. Federal Reserve Flow of Funds through Global Insight. (Series codes: FAPNREZVR for the current value of corporate fixed assets; FL893064105 for market value of corporate equities; FL893163005 for the market value of corporate and foreign bonds.)

**BOX 1**

$$r = \frac{R}{K}$$

$$0.1 = \frac{100}{1,000}$$

$r$  = rate of profit (decimal fraction)

$R$  = total profit (\$/year)

$K$  = invested capital (\$)

**BOX 2**

Substitute ( $Y - W$ ) for  $R$ :

$$r = \frac{Y - W}{K}$$

$r$  = rate of profit (decimal fraction)

$Y$  = net output (\$/year)

$W$  = total wages and salaries (\$/year)

$K$  = invested capital (\$)

**BOX 3**

Substitute ( $S - M$ ) for  $Y$ :

$$r = \frac{S - M - W}{K}$$

$r$  = rate of profit (decimal fraction)

$S$  = total sales, assuming all production is sold (\$/year)

$M$  = cost of material and depreciated capital (\$/year)

$W$  = total wages and salaries (\$/year)

$K$  = invested capital (\$)

**BOX 4**Divide numerator and denominator by  $N$ :

$$r = \frac{\frac{S}{N} - \frac{M}{N} - \frac{W}{N}}{\frac{K}{N}} = \frac{\frac{S}{N} - \frac{M}{N} - w}{\frac{K}{N}}$$

 $r$  = rate of profit (decimal fraction) $S$  = total sales (\$/year) $M$  = cost of material and depreciated capital (\$/year) $W$  = total wages and salaries (\$/year) $K$  = invested capital (\$) $N$  = number of hours of labour per year $w$  = wage rate (refers to both wages and salaries, \$/hour)

**BOX 5**

Decompose sales per hour of labour  $S/N$ :

$$\frac{S}{N} = P_z z$$

$S$  = total sales (\$/year)

$N$  = number of hours of labour per year

$P_z$  = price of the product (\$)

$z$  = number of units sold per hour of labour

Decompose the number of units sold per hour of labour  $z$ :

$$z = ef$$

$z$  = number of units sold per hour of labour

$f$  = efficiency of labour when workers work at maximum "intensity" (units/hour)

$e$  = the "intensity" of labour ( $0 < e < 1$ )

Substitute  $ef$  for  $z$ :

$$\frac{S}{N} = P_z z = P_z ef$$

Substitute  $P_z ef$  for  $S/N$ :

$$r = \frac{\frac{S}{N} - \frac{M}{N} - w}{\frac{K}{N}} = \frac{(P_z ef) - \frac{M}{N} - w}{\frac{K}{N}}$$

**BOX 6**

Decompose cost of materials and depreciation per hour of labour  $M/N$ :

$$\frac{M}{N} = P_m m$$

$M$  = total cost of materials and depreciation (\$/year)

$N$  = number of hours of labour per year

$P_m$  = price of "unit" of materials and depreciation (\$)

$m$  = number of "units" of materials and depreciation used per hour of labour

Substitute  $P_m m$  for  $M/N$ :

$$r = \frac{(P_z e f) - \frac{M}{N} - w}{\frac{K}{N}} = \frac{(P_z e f) - (P_m m) - w}{\frac{K}{N}}$$

**BOX 7**

Decompose the \$ value of capital goods per hour of labour  $K/N$ :

$$\frac{K}{N} = k = \frac{P_c(CG)}{N} = P_c \frac{CG}{N}$$

$K$  = invested capital (\$)

$N$  = number of hours of labour per year

$k$  = value of invested capital per hour of labour (\$/hour)

$P_c$  = price of capital goods (\$)

$CG$  = "quantity" of capital goods (\$)

Decompose the "quantity" of capital goods per hour of labour  $CG/N$ :

$$\frac{CG}{N} = \frac{CG}{CG \text{ in use}} \times \frac{CG \text{ in use}}{N} = \frac{1}{u} g$$

$g$  = quantity of capital goods per hour of labour (\$)

$u$  = capacity utilization (fraction the capital goods actually in use,  $0 < u < 1$ )

Substitute back into the value of capital goods per hour of labour  $K/N$ :

$$\frac{K}{N} = k = \frac{P_c(CG)}{N} = P_c \frac{CG}{N} = P_c \frac{1}{u} g$$

Substitute back into the rate of profit  $r$ :

$$r = \frac{(P_z ef) - (P_m m) - w}{\frac{K}{N}} = \frac{(P_z ef) - (P_m m) - w}{P_c \frac{1}{u} g}$$