Piketty on Capital and Inequality

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Piketty's Main Claims

1. **The Return on Capital is Greater than Growth.** Piketty claims that **r**, *the average annual rate of return on capital*, is in the long-run greater than **g**, *the growth of the economy (i.e., the annual increase in income or output).*

$$\mathbf{r} > \mathbf{g} \tag{1}$$

   And, "If ... the rate of return on capital [**r**] remains significantly above the growth rate [**g**] for an extended period of time ..., then the risk of divergence in the distribution of wealth is very high." [pg. 25]

"In slowly growing economies, past wealth naturally takes on disproportionate importance, because it takes only a small flow of new savings to increase the stock of wealth steadily and substantially." [pg. 25]

2. **Inherited Wealth Grows Faster than Income.** If $\mathbf{r} \gg \mathbf{g}$, then inherited wealth grows faster than output and income. The reason? "People with inherited wealth need save only a portion of their income from capital to see that capital grow more quickly than the economy as a whole." [pg. 26]

"Under such conditions, it is almost inevitable that inherited wealth will dominate wealth amassed from a lifetime's labor by a wide margin, and the concentration of capital will attain extremely high levels — *levels potentially incompatible with the meritocratic values and principles of social justice fundamental to modern democratic societies.*" [pg. 26 (emphasis added)]

Piketty's Pessimistic Conclusion: *patrimonial capitalism.* If the above conditions hold, then capitalism will lead to a distribution of wealth that resembles an aristocracy. Such a distribution is incompatible with the values fundamental to modern democracy.

Capital & *Income*

1. **What is Income?** "National income is defined as the sum of all income available to the residents of a given country in a given year, regardless of the legal classification of that income." [pg. 43]

   National Income = Domestic Output + net income from abroad

   National Income = Capital Income + Labor Income

How is national income related to GDP?

National Income = GDP − the depreciation of the capital used in production + net income received from abroad

Picketty refers to (GDP − the depreciation of the capital used in production) as "domestic output".

Labor Income	Capital Income
wages, salary, honoraria, bonuses, etc.	profits, dividends, interest, rents, royalties, etc.

2. **What is Capital?** "[C]apital is defined as the sum total of nonhuman assets that can be owned and exchanged on some market." [pg. 46]

   Examples of Capital: Nonfinancial Assets *(land, dwellings, commercial inventory, other buildings, machinery, infrastructure, patents, etc.)* and Financial Assets *(bank accounts, mutual funds, bonds, stocks, other financial investments, insurance policies, pension funds, etc.)*.*

*Note: Piketty uses "capital" and "wealth" interchangeably.

The Capital/Income Ratio

$$\beta = \frac{\text{the capital stock}}{\text{the annual flow of income}}$$

Income is a Flow: "... the quantity of goods produced and distributed in a given period." [pg. 50]

Capital is a Stock: "... the total wealth owned at a given point in time." [pg. 50]

The Capital/Income Ratio β is related to the share of *income from capital* in National Income.

The First Fundamental Law of Capitalism

$$\alpha = \mathbf{r} \times \beta$$

α = Capital's Share in National Income.

$\mathbf{r}$ = Rate of Return on Capital.

β = Capital/Income Ratio.

This law is tautological (i.e., it is trivially true given the meanings of its terms).

"... the law $\alpha = \mathbf{r} \times \beta$ simply means that regardless of what economic, social, and political forces determine the level of the capital/income ratio (β), capital's share in income (α), and the rate of return on capital ($\mathbf{r}$), these three variables are not independent of one another." [pg. 55]

Example of the First Law

	Firm A	**Firm B**
Value of Capital	$5,000,000	$3,000,000
Value of Goods Produced	$1,000,000	$1,000,000
Paid out in Wages	$600,000	$700,000
Profits	$400,000	$300,000
Capital/Income Ratio	$\beta = 5$	$\beta = 3$
Capital Share	$\alpha = 40\%$	$\alpha = 30\%$
Rate of Return	$\mathbf{r} = 8\%$	$\mathbf{r} = 10\%$

Savings & Growth

Piketty posits a dynamic law relating the Capital/Income Ratio (β) in an economy to an economy's Saving Rate (s) and Growth Rate ($\mathbf{g}$).

The Second Fundamental Law of Capitalism

$$\beta = \frac{s}{\mathbf{g}}$$

β = Capital/Income Ratio.

s = Savings Rate.

$\mathbf{g}$ = Rate of Growth.

"[A] country that saves a lot and grows slowly will over the long run accumulate an enormous stock of capital (relative to its income), which can in turn have a significant effect on the social structure and distribution of wealth." [pg. 166]

Note: This law only holds "in the long run". The identity here is an *equilibrium*. And the equation is only valid if certain assumptions hold (see pg. 168-9)

Inequality in Capital & Labor

Piketty claims that *inequality with respect to capital* is always greater than *inequality with respect to labor.* This is, in part, because $\mathbf{r} > \mathbf{g}$. Because Capital is often transferred via inheritance, Piketty worries that capitalism naturally tends toward *patrimonial capitalism.*