Spendomania is a country inhabited by many identical consumer/workers. They have tastes given by

$$\sum_{t=1}^{\infty} \beta^{t-1}[U(c_t) + V(1 - l_t) + G(g_t)],$$

where c_t is period-t consumption, l_t is period-t work effort, and g_t is government spending on a public good. Output, y_t, is produced by firms in line the following constant-returns-to-scale production function:

$$y_t = F(k_t, l_t),$$

where k_t is the amount of capital rented by firms. Capital depreciates at rate δ. Spendomania currently has a fiscal system where the government levies a tax on a person's labor income in period t at rate, λ_t. The interest and principal after depreciation on capital income are taxed at rate, ρ_t. Firms are *not* taxed. Taxes are used solely to finance government spending, g_t, on a public good, in this case statutes of former presidents. Spendomania has a balanced budget requirement in its constitution. Congressman Sharp says that it would be better to replace the labor income tax rate, λ_t, with a tax rate on consumption, ψ_t. He claims that this tax is neutral on labor effort and promotes savings. Senator Shallow disagrees. She says that anything that can be done, from the perspective of *both* the government and citizens, with a consumption tax, ψ_t, and capital income tax, $\widehat{\rho}_t$, can also be done with an labor income tax, λ_t, and a capital income tax, ρ_t. (Denote the tax rate on capital income when there is a consumption tax in place by $\widehat{\rho}_t$.)

Who is correct? Prove your answer rigorously. Give intuition for your answer.