

Prof. Dr. Heinz D. Kurz

## 2. Klausur zu KV "Wachstum und Verteilung", 17.6.2011

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Name:

Matrikel-Nr.:

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Sie müssen in jedem der beiden Partiale mindestens 30% erreichen und insgesamt mindestens 50%!

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### 1. The Solow Model

1. Assume that the workforce grows at 1% and the savings=investment rate is 0.1 (or 10%). Assume in addition with Solow that there is a macroeconomic production function

$$Y = 4K^{1/3}L^{2/3}.$$

Calculate the steady-state values of  $k$ ,  $y$ ,  $r$ ,  $w$ ,  $v$ ,  $x$ ,  $\Omega$ .

2, Assume now that the efficiency of labour increases at a rate of 2% over time (Harrod-neutral technical progress). Determine the new steady-state of the system. Which of the values of the above variables remain constant, which change over time?

3. Define and illustrate in a diagram Harrod-neutral technical progress.

4. Under which conditions will there be convergence (define what is meant by it) among two economies, if interpreted in terms of the Solow model?

## 2. “New” Growth Theory

1. Discuss the main building blocks and their interaction in Romer’s 1986 model of endogenous technical progress.

2. In a type of model put forward by Jones and Manuelli, the intensive form of the production function is given by

$$h(k) = 2k^{1/2} + 0.2k$$

Assume that the savings=investment rate is 0.2. What is the rate of profits  $r$  in the *very long run*, what is the rate of growth? What is the wage rate?

3. In a simplified version of their “Schumpeterian Model” of economic growth, Aghion and Howitt assume that growth results from innovations that raise the productivity parameter of a macro production function via improving the quality of intermediate product(s). Explain the characteristic features and findings of the model.

4. The concept of "knowledge" plays an important role in growth economics. What do you know about this crucial concept?