Klausur: Taxes and Business Strategy

Prüfer: Prof. Dr. Kiesewetter

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Veranstaltungs-Nr.: 2163

**Disclaimer**: You may use a non-programmable pocket calculator

**This exam consists of 4 questions. All questions must be answered.**

**Good Luck!**

## Question 1 **(8 Points)**

What assumption must be made on the tax treatment of interest paid on a consumer loan to make sure that Fisher separation holds? Explain verbally, graphically or mathematically.

## Question 2 **(8 Points)**

What different types of tax effects on investment decisions do you know? Give one example for each effect. A verbal description will do, no numeric example is required.

## Question 3 **(8 Points)**

Show mathematically that in a classical system of corporate and personal income taxation the decision to retain or to pay out profits is independent from dividend taxation. Which assumption is crucial for this result?

**Turn to next page!**

## Question 4

**(36 Points)**

Susan Smart is a resident citizen of the Republic of Banana. At date t=0 she plans to make an equity-financed investment of 1,600,000 Banana-$ for the purchase of a production machine. She expects the investment to generate the following cash-flow:

| T | 1 | 2 | 3 |
|---|---|---|---|
| $Z_t$ | 520,000 | 845,000 | 1,318,200 |

Susan Smart wants to maximize her wealth. The market rate of interest is 30%.

a) Calculate the NPV of the investment in a world without taxes. Should Susan make the investment?

b) In the Republic of banana business income and interest income are subject to personal income tax at a flat rate of 70%. Susan's new machine must be depreciated over 3 years. Only linear depreciation is allowed. Calculate the NPV after tax of the investment.* Should Susan make the investment under these conditions?

c) One week after Susan has made the investment, the President of the Republic of Banana, Dr. Baksheesh, is re-elected with 99.99 percent of all votes. In his Speech to the Nation he announces an immediate tax rate cut from 70% to 50% "as an acknowledgment of his gratitude to his beloved people". Re-calculate the NPV using the new tax rate from t=1 onwards!* What effect does the tax reform have on Susan's investment?

d) Comment on the changes in NPV
- between (a) and (b)
- between (b) and (c)!

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* You may assume an immediate loss offset in (b) and (c).