Departamento de Economia Universidade de São Paulo EAE-1234 - Final exam Prof.: Pedro Forquesato November 28, 2024

Student's name:	 Nº USP:

**Instructions:** The exam is **individual and closed book**. The exam is worth 10 points. The time allotted to completing the exam is **1 hour and 40 minutes**. All answers to be valid need to be well explained (and calculations explicitly stated), but answers that do not respond the *exact* statement of the exam question will be ignored. **Answers should be based on the course content.** The maximum *suggested* answer size for each conceptual question is *half a page*. The exam should be answered **entirely in pen**. The exam can be answered both in English or in Portuguese.

- 1. (1 point) In November 2024, the Brazilian Central Bank raised the risk-free interest rate in the Brazilian economy (the Selic rate) to 11.25%. By changing the relative prices between current and future consumption, a rise in the basic rate affects the consumer decision the same way as a subsidy on savings. What is the effect of the BCB decision on current and future consumption and on the savings rate in the life-cycle model? Be precise and complete.
- 2. (1 point) The G20 meeting in Brazil in the beginning of November saw the approval of a Brazilian proposal for studies about an international tax on the super-rich. In fact, it is estimated that a 2% wealth tax would raise US\$250 billion annually. Discuss the differences between a tax on wealth (stock) versus a tax on capital income (flow).
- 3. (1 point) During the approval of the Tax Reform in Congress, Brazilian congressmen also approved some changes to the inheritance tax, ITCMD, exempting some types of investments from that levy. Discuss the desirability of a reduction in the inheritance tax, according to the theories of *accidental* and *altruistic* inheritance.
- 4. (1 point) Discuss the benefits and drawbacks of corporate taxation versus dividend taxation in a *small economy* with *perfect capital mobility*. Be precise and complete.
- 5. (1 point) With the recent difficulties facing the Brazilian government in reaching a budget surplus, it has come back to discussion changes to the Brazilian retirement system, only 5 years after a wide-reaching reform in Brazilian social security. Discuss the problems and difficulties with the retirement benefits in Brazil.
- 6. (1 point) In 2019, an universal basic income (UBI) pilot in United States randomized one thousand poor people (the treatment group) into receiving 1,000 US dollars per month unconditionally for 3 years, while 2 thousand people received nothing. An evaluation of this pilot found that the UBI led to a decrease of 4-5% in labor earnings relative to the control group mean. Is this result surprising? Is it concerning? Explain using the concepts of

*income and substitution effects* and *excess burden*, making it clear the distinction between *means-tested* assistance programs and an universal basic income.

- 7. (1 point) Explain the difference in economic impact of an universal basic income (UBI) transfer of \$1,000, like in exercise 6, financed by a proportional income tax of 20%, and a *means-tested* transfer of \$1,000 for people with no income, with a benefit reduction rate of 20% up to zero, and then a tax on 20% for people earning more than this break-even point.
- 8. (3 points) An economy is composed of identical individuals who earn R\$400 when working and zero otherwise. When unemployed (which happens with probability q), they earn an unemployment insurance of b reais from the government. This insurance is financed by a proportional payroll tax  $\tau$  paid by employed workers. Assume that there is no other possible source of income, that agents consume all they earn and that the workers' preferences are represented by an utility function of the form

$$u(c) = \sqrt{c}$$

- (a) Write the workers' expected utility as a function of q, b, and  $\tau$ .
- (b) Consider now that q = 0.5. a *balanced budget* policy, find the benefit level b that maximizes workers' expected utility. What is the payroll tax  $\tau$  that makes such a benefit possible?
- (c) Now assume that there is a second type of individuals (both with the same number of people), exactly alike the first except that they have lesser risk of unemployment, with q = 0.2. Assume furthermore that individuals' unemployment risk is not observable. What is now the budget neutral policy? What is the willingness to pay as a function of  $\tau$  of the low risk individuals for this unemployment insurance (given the new budget neutral policy)? Are they better off with a tax of  $\tau$  as in (b)?