Question 1

**True or False?** (No explanation, 1 point each – 6 total)

a. Consider a standard labor market with downward sloping labor demand and upward sloping supply, as we have seen in class. If there is a temporary increase in labor income taxes, the burden of the increase falls entirely on the workers.

**FALSE.** If the labor demand curve is downward sloping and the labor supply curve is upward sloping, as it is typically the case, after an increase of the labor income tax, the new equilibrium will be characterized by higher before-tax real wage and lower after-tax real wage, which means that both the firms have to pay higher real wage and the workers obtain lower real wage after paying taxes. (The burden of the increase would be only on the workers if the labor demand curve was infinitely elastic!)

b. Consider a standard labor market with downward sloping labor demand and upward sloping supply, as we have seen in class. According to our theory, if income taxes increase permanently, employment unambiguously decreases.

**FALSE.** If income taxes increase permanently, employment tend to decrease because of the substitution effect (people want to work less hours if they have to give to the government part of their reward to work), and to increase because of the income effect (people want to work more because they are poorer). The net effect is theoretically ambiguous (and we need to look at the data to know which one dominates).
c. If the labor supply curve is horizontal (that is, extremely elastic), real wages won’t increase in response to an increase in TFP.

**TRUE.** When the labor supply is completely elastic, workers are happy to work for the same real wages, for any amount of hours. This implies that firms’ demand determines the employment level.

d. Structural unemployment rates tend to be higher in countries with high firing costs because firms will be more cautious in hiring workers in good periods.

**TRUE.** If firms know that they have to pay extra costs to fire the workers when they would like to, they will be more cautious to hire them if they are afraid that bad times may come. So, in countries with higher firing costs, firms are more cautious and hire less workers and more workers who would like a job cannot find one, that is, unemployment rates are higher.

e. Everything else constant, a permanent decrease in the tax rate on firm revenues increases investment

**TRUE.** Lower taxes on firm revenues mean lower user cost of capital adjusted for taxes, and, everything else constant, higher desired level of capital. This increases investment.

f. During the recent recession business loans fell significantly. This is enough to infer that the loan supply shrunk.

**FALSE.** If one look only at the decrease in business loans, it is unclear if it is due to a decline in supply of loans from financial institutions or to a decrease in demand for loans from firms.

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**Question 2**
Think at the graphical representation of the labor market we have seen in class last week.

Follow STRICTLY the following instructions to answer. For each part of the question:

point 1 possible answers: Labor supply, Labor Demand, Both ---1 point each

point 2 possible answers: If by previous point only one curve move, just say Right, Left, or Ambiguous. If both curve move, specifies for each one Right, Left, or Ambiguous (example: Labor Supply Right, Labor Demand Left) ---1 point each

point 3 possible answers: Increase, Decrease, Ambiguous ---1 point each

a. Think of a temporary decrease in TFP.
   1. Which curve is going to move? **Labor Demand**
   2. In which direction? **Left**
   3. What happen to the equilibrium N? **Decreases**

b. Think of a temporary decrease in consumption taxes
   1. Which curve is going to move? **Labor Supply**
   2. In which direction? **Right (substitution effect only!)**
   3. What happen to the equilibrium N? **Increases**

c. Think of a permanent decrease in consumption taxes.
1. Which curve is going to move? **Labor Supply**

2. In which direction? **Ambiguous** *(substitution effect to the right, but income effect to the left!)*

3. What happen to the equilibrium N? **Ambiguous**

d. Think of a permanent increase in the value of leisure - VL - (for given forgone real wage), like the invention of Netflix.

1. Which curve is going to move? **Labor Supply**

2. In which direction? **To the left** *(both because of the shift in VL and the income effect due to permanent increase in w/p!)*

3. What happen to the equilibrium N? **Decreases**

**Question 3**

Discuss whether the following statement is true, false, or uncertain. No credit will be given if you say true and the answer is true. Your explanation determines your entire grade. Your answer should not be more than 2 sentences (a perfect answer could be one sentence). ---4 points

*If investment is irreversible (meaning, that it is costly is to have negative investment) and there is a lot of uncertainty about the future, then firms would tend to invest less than if investment is fully reversible.*

This is true. If investment is irreversible, firms will be more cautious in their investment decisions especially when there is a lot of uncertainty about the future. If times are good and firms expect next year’s marginal product of capital to be higher than the user cost of capital, firms may still decide to wait before increase their investment, if they are not sure what will happen to MPK two years from now. In fact, if MPK two years from now drops at a level lower than the user cost of capital it would be optimal for firms to reduce their capital, but if it is costly to make negative investment (sell capital), then they may prefer not to increase it in the first place.
In the Economist article “From hoarding to hiring”, the journalist highlight the different pattern of unemployment rate in the United States and in Germany in the recent years: by the end of 2009 unemployment rate in Germany was lower than two years earlier, while in the US was still as high as 9.6%. Mention one of the explanations for this divergence in labor market performance proposed by the journalist. -- 4 points [Your answer should be no more than 1 short sentence!]

You could have answered any of the following:

1. The biggest difference between Germany and US during the recent recession was that German firms did not fire many workers, but cut their working hours, while US firms cut workers more than hours.
2. The effects of the recession were different because US has a big slump in the construction sector which was permanently hit, while Germany relied more strongly on exports and the decline of global trade was more temporary
3. Germany has undergone labor market reforms that made its labor market surprisingly flexible.