

## Worksheet - Money and inflation

### Problem 1 - Functions of money

Evaluate the effects of the following changes on the demand for M1 and M2. Which of the functions of money do they relate to?

- "Instant-cash" machines that allow 24-hour withdrawals from savings accounts in banks.
- The employment of more tellers at your bank.
- An increase in inflationary expectations.
- Widespread acceptance of credit cards.
- Fear of imminent collapse of the government.
- A rise in the interest rate on time deposits.
- The rise of the e-commerce.

### Problem 2 - Money supply determinants

Currency is 100 mil, deposits are 400 mil and reserve-deposit ratio is  $1/8$ .

1. How big is money supply?
2. How big are reserves?
3. When central bank buys government bonds for 20 mil, what will be the increase in the money supply? (Consider also multiplication effect).

### Problem 3 - Inflation and relative prices

In the year 2009, Franta was buying 10 apples and 10 oranges, each 1\$ for 1kg. In 2010, Franta still buys 10 oranges and 10 apples, but oranges are now 1.3\$/kg and apples 1.2\$/kg.

1. How much did Franta spend nominally on fruit last year?
2. How much has the price of oranges risen? And how much has the price of apples risen?

3. How much is Franta spending on fruit this year? What inflation does he face?
4. Assume now that Franta's income hasn't risen from year 2009. How does the price increase affect total amount of fruit bought / relative amounts of apples and oranges bought?

#### **Problem 4 - Price indices**

Marek consumes only apples. In year 2008, red apples cost \$1 each, green apples cost \$2 each, and Marek buys 10 red apples. In year 2009, red apples cost \$2 each, green apples cost \$1 each, and Marek buys 10 green apples.

- Compute a CPI for apples, assuming the year 2008 is the base year in which the consumer basket is fixed. What does it imply about the change in costs of living and why?
- Compute Marek's nominal spending on apples in each year - how does it change?
- Compute Marek's real spending on apples in each year, assuming year 2008 is the base year.
- Compute the price deflator, defined as nominal spending over real spending. What does it imply about the change in costs of living and why?
- Suppose that Marek is equally happy eating red or green apples. How much has the true cost of living increased for Marek? What does it imply about CPI and GDP deflator?