NOTE: I create the source tables in Task\_1 file to use throughout all the tasks.

Source table 1 creates a list of average salaries per Branch and Year.

Source table 2 creates a list of average prices per Product and Year.

1. Rostou v průběhu let mzdy ve všech odvětvích, nebo v některých klesají?  
   Are wages rising in all industries over the years, or falling in some?

First I create a helper view which joins ’source table 1’ on itself but shifted by one year.  
Creates difference between year X and year X-1 and calculates percentage change. Positive = salary growth, negative = salary decrease. There is commented option to filter only negative years. This in itself can be an answer to the question, but it’s very detailed and time consuming to read, therefore I made second table:

The second table measures total increase over years for which we have data. Logically there is increase in all Branches, so I give the reader total percentage of growth and also if the growth was interrupted i.e. if there were years when branch suffered decline in salaries.  
Reader can then focus on interesting years by viewing table 1.

Discussion of results:  
All branches had interrupted growth.   
First decline was around year 2008 - 2013 – when full impact of financial crisis hit each branch with bigger or smaller delay.   
Second was at years 2019 and 2020, with much smaller time delay, when Covid crisis shook the markets.

1. Kolik je možné si koupit litrů mléka a kilogramů chleba za první a poslední srovnatelné období v dostupných datech cen a mezd?  
   How many liters of milk and kilograms of bread can be bought for the first and last comparable period in the available price and wage data?

In this task I use Views to get to final result of the question.

1st view is to get years present in both tables using INTERSECT clause.

2nd view is used to get prices of desired products for min and max years present in data.

3rd views returns average salary in said years.

Final table combines previous results and calculates how many units (litres or kilograms) of product could you get in firs and last year measured.

A screenshot of a computer

Description automatically generated

Discussion of results: No need, I believe they are self-explanatory

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1. Která kategorie potravin zdražuje nejpomaleji (je u ní nejnižší percentuální meziroční nárůst)?  
   Which food category is increasing in price the slowest (it has the lowest percentage year-on-year increase)?

In this task I demonstrate usage of CTEs to get to the final result in one query.

In this task I join tables with filtered prices form Min year and Max Year on itself.

I calculate total increase, which is pretty straightforward.

And lastlyI calculate annual increase. This is not simply total increase/ nb of years, because that would not account for gradual increase of baseline price. Instead I use proper financial formula:

***P2 = P1\*(1+I)^Y***

Where

*P1 = Initial Price*

*P2 = Final price*

*I = Annual increase*

*Z = Number of years*

Then express „I“ from the formula to get annual increase:

**I= ((C2/C1)-1)^(1/Y)**

Discussion of results:

To answer the question literally, the slowest growth of price is in bananas, which equals 0,6% annually.

However there even cases of total price decrease. Specifically for tomatoes 2,16% and sugar 2,65%.

1. Existuje rok, ve kterém byl meziroční nárůst cen potravin výrazně vyšší než růst mezd (větší než 10 %)?

Has there been a year in which the year-on-year increase in food prices was significantly higher than wage growth (greater than 10%)?

In this task I again use CTEs to get result in one query. First I calculate year by year percentage change in salaries.

Then I do the same for prices.

Finally I just calculate difference between the price/salary change.

Discussion of results: The answer to the question is NO, there was no year when prices rose more than 10% faster than salaries. The closest that came to pass was year 2013 when the increase was 6,66%.

1. Má výška HDP vliv na změny ve mzdách a cenách potravin? Neboli, pokud HDP vzroste výrazněji v jednom roce, projeví se to na cenách potravin či mzdách ve stejném nebo násdujícím roce výraznějším růstem?

Does the level of GDP affect changes in wages and food prices? Or, if the GDP increases significantly in one year, will it affect the food prices or wages in the same or the following year by a more significant growth?

In the final task I again use CTEs.

Firstly I get a table of year on year change in GDP per country.

Then the change in prices for given years.

Finally I combines much like in previous task.

Discussion of results

The result is inconclusive in my opinion. In some years Prices and GPD go hand-in-hand, but then after financial crisis, the data is all over the place and seem to go against each other. Overall I do not believe GDP is a good signal for how the standard of living or prices are changing. Depends on the context of GDP change really.

A graph with red and blue lines

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