The impact of unexpected inflationary shock in 2022 and 2023 on the welfare of families: The case of Slovakia

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Introduction

• Our aim is to answer the question: “What are the distributive effects of inflationary shock on Slovak families?”

• We look at net changes in purchasing power in 2022 and 2023 after the cushioning effects of government measures and the cushioning effects of economic adjustments.

• We look at changes due to the inflationary shock and at total y-o-y changes.

• We incorporate the effect of inflation into the static microsimulation model developed in our institution.

• Our results represent an “upper bound” effect due to the assumption of no behavioral change.
Modelling approach
What we thought in summer 2021 about 2022 and 2023

(June 2021 macroeconomic forecast)

What we know now about 2022 and 2023

(February 2023 macroeconomic forecast)

Overview of modelling approach
Overview of modelling approach

Scenario without the inflationary shock

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Families’ disposable income & expenditures in 2022 and 2023 as it would be without the inflationary shock (including the effect of gov. measures unrelated to the shock).

Incorporation of price increase only (without price cap)

The ‘day-after’ effect of price increase
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- Incorporation of price increase & macroeconomic adjustments

- The ‘day-after’ effect of price increase

- The effect of economic adjustments
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Incorporation of price increase & macroeconomic adjustments
Incorporation of price increase (with price cap) & macroeconomic adjustments & government measures related to the shock

The ‘day-after’ effect of price increase
The effect of economic adjustments
The effect of govern. measures

Note: The order of scenarios matters. First macroeconomic adjustments and then government measures, as the eligibility for child credit depends on wages.
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- **SILC 2019**
  - Data on HHs' income and demographic characteristics
  - Adjusted to the analyzed year (recalibration of weights & indexation of financial values)

- **SIMTASK**
  - Adjusted database & TB system rules & Parameters

- **HBS 2015**
  - Data on HHs' income, expenditures and demographic characteristics
  - Adjusted to the analyzed years

- **HBS**
  - Adjusted database

*We assume there is no behavioural reaction of economic agents.*

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**The expenditure allocation model**

- Disposable income
- Consumption expenditures by 12 COICOP categories

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[Link to RRZ website]
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- Incorporation of government measures by adjusting the tax-benefit system rules and the parameters of tax benefit system to legislative changes

- Incorporation of economic adjustments by adjusting financial values in the database (wage growth & valorization of non-simulated benefits) and by adjusting the parameters of tax benefit system (valorization of simulated benefits) to changes induced by inflationary shock

**Disposable income**

**Consumption expenditures by 12 COICOP categories**
Analytical approach combining the HBS data and microsimulation model SIMTAS

<table>
<thead>
<tr>
<th>SILC 2019</th>
<th>SIMTAS</th>
<th>Incorporation of government measures by adjusting the tax-benefit system rules and the parameters of tax benefit system to legislative changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>data on HHs' income and demographic characteristics</td>
<td>HBS</td>
<td>Incorporation of exogenous inflationary shock by increasing the expenditures (imputed into the SIMTASK model in the no-shock scenario*) by the inflationary shock in 12 COICOP categories &amp; divide the households’ expenditures proportionally to disposable income of the families</td>
</tr>
</tbody>
</table>
| adjusted to the analyzed year (recalibration of weights & indexation of financial values) | HBS Adjusted database                                                   | *We assume there is no behavioural reaction of economic agents.  
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Assumptions
## Assumptions on inflation & inflation-related effects

<table>
<thead>
<tr>
<th>Forecast</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun-21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation rate without the shock</td>
<td>2.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Feb-23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation rate with the shock</td>
<td>12.8</td>
<td>19.7</td>
</tr>
<tr>
<td><strong>Inflationary shock</strong></td>
<td>9.9</td>
<td>17.3</td>
</tr>
<tr>
<td>Jun-21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wage growth without the shock</td>
<td>4.1</td>
<td>4.9</td>
</tr>
<tr>
<td>Feb-23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wage growth with the shock</td>
<td>8.1</td>
<td>10.5</td>
</tr>
<tr>
<td><strong>Inflation-induced wage growth</strong></td>
<td>4.0</td>
<td>5.6</td>
</tr>
<tr>
<td>Jun-21</td>
<td></td>
<td></td>
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<tr>
<td>Pensioners' inflation without the shock</td>
<td>1.3 *</td>
<td>3.0</td>
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<td>Feb-23</td>
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<td>Pensioners' inflation with the shock</td>
<td>1.3</td>
<td>11.8</td>
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<tr>
<td><strong>Extra valorization of pensions</strong></td>
<td>0.0</td>
<td>8.8</td>
</tr>
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<td>Jun-21</td>
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<td>Minimum subsistence level without the shock</td>
<td>1.5 *</td>
<td>2.9</td>
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<td>Feb-23</td>
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<tr>
<td>Minimum subsistence level without the shock</td>
<td>1.5</td>
<td>7.5</td>
</tr>
<tr>
<td><strong>Extra valorization of social transfers other than pensions</strong></td>
<td>0.0</td>
<td>4.6</td>
</tr>
</tbody>
</table>

* Value in 2021 is fixed the same for both forecasts

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*Decomposition of headline inflation rates by COICOP categories*

*Non-uniform wage increase across income distribution*
Government measures: Related directly to the inflationary shock

• **Two anti-inflationary packages in 2022**
  • one-off benefits paid to vulnerable households (100-euro support)

• **The so-called 14th pension benefit in 2022**

• **Price cap on energy prices for households in 2023**
  • the government caps energy prices for households in 2023 via subsidies and a contract with the main electricity supplier
  • the measure holds electricity prices for households flat, while natural gas and heating prices will rise by 15 %

• **Advance indexation of pensions in 2023**
  • in July 2023 instead of January 2024 by 10.6 %
  • all types of pensions
Government measures: Unrelated to the inflationary shock

- **Income support measures targeted at families with children in 2022 and 2023**
  - a permanent increase of the child tax credit
  - a permanent increase of child benefit

- **A COVID vaccination incentive bonus in 2022**
  - to those citizens who got vaccinated against COVID-19 disease and were older than 60 years
The results:
The effect of the inflationary shock
The effect of the inflationary shock: income deciles

Families ordered by equivalized income into ten deciles
The effect of the inflationary shock: income deciles

Families ordered by equivalized income into ten deciles

The effect of uncompensated inflationary shock
The effect of the inflationary shock: income deciles

Families ordered by equivalized income into ten deciles

- Price cap
- Gov. measures related to shock
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The effect of the inflationary shock: income deciles

Change in purchasing power in %

Families ordered by equivalized income into ten deciles

- Price cap
- Interaction effect
- Compensation through wage channel
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2022

2023

All

All
The effect of the inflationary shock: income deciles

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- Net effect of inflationary shock
- Gov. measures related to shock
- Effect of gov. measures & macro adjustments

Change in purchasing power in %

2022

2023

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The effect of the inflationary shock: family types

Change in purchasing power in %

- Price cap
- Interaction effect
- Compensation through wage channel
- Net effect of inflationary shock

2022

2023

Gov. measures related to shock
Compensation through valorization channel
The effect of uncompensated inflationary shock
Effect of gov. measures & macro adjustments
Conclusions

Interpretation of the results on the impact of the price shock

• An “upper bound” effect due to the assumption of no behavioral change
• The results are dependent on the considered set of anti-inflationary policies

Under given assumptions we conclude

• The net effect of price shock, after compensations by government measures and economic adjustments, led to a drop in purchasing power in 2022 for an average family and to an increase in 2023. Which is mainly due to the lag in automatic indexation mechanism for social benefits.

Beyond presented results:

• When considering two-year horizon, purchasing power dropped for all analyzed family categories. Thus, inflation-related compensations were not sufficient to fully compensate for the price shock.
• The generous permanent pro-family measures, which we consider unrelated to price shock significantly contributed to the YoY increase in purchasing power of families with children in 2023.
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