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WHETHER LOW-INCOME HOUSEHOLDS AND RETIREES FACE HIGHER INFLATION? EVIDENCE FROM LATVIA

Abstract. Economy-wide inflation rate does not necessarily correspond to the inflation rate actually faced by any given household. This paper is the first one to assess different inflation experiences of various household types in Latvia. It finds that low-income households and retirees have faced consistently higher inflation rate by about 0.5 percentage points per annum over the last 20 years. This result is consistent with higher inflation perceptions among these population groups as recorded in consumer surveys. Higher inflation for low-income households and retirees reflects the lion's share of food, utility bills and healthcare services in their consumption basket, which are among those goods and services with the fastest increase in consumer prices. Inflation inequality was particularly large before the Global Financial Crisis (GFC) of 2008 and grew again at the beginning of the Covid-19 pandemics. It is expected that inflation inequality in Latvia might increase further in 2022. The results of this study could be used in welfare policy debates, particularly regarding the use of retiree-specific (rather than economy-wide) inflation rate for indexation of old-age pensions, as well as analysing unequal economic costs of the Covid-19 pandemics on different population groups.

Keywords: *inflation inequality, inflation by population groups, inflation perceptions by population groups*

JEL code: D12, E31.

Introduction

Economy-wide inflation rate reflects the changes in aggregate consumer price index, which is based on an aggregate consumption bundle and on average prices for various goods and services. It does not necessarily correspond to the inflation rate actually experienced by any given household (Kaplan and Schulhofer-Wohl, 2017). Furthermore, since the consumption basket of the rich has a larger weight than that of the poor in a consumer price index, it better reflects the evolution of prices experienced by upper-income groups than that of lower-income groups in what is known as the plutocratic bias of the consumer price index (Garcimartín et al., 2021). As consumption structure differs between households and consumer price trends differ across products, each household faces its own inflation rate – a phenomenon which is referred in academic literature as inflation inequality. Inflation inequality could cause disagreements in inflation perceptions, inflation expectations and might have an impact on households' asset allocation and consumption decisions (Li et al., 2017). Inflation inequality might also have important implications for income inequality and, thus, welfare policy.

There is an evidence that the higher is the average inflation rate, the bigger are inflation differentials between various population groups (Janský and Hait, 2016). After a short deflationary period at the beginning of Covid-19 pandemics, consumer price inflation in Latvia increased substantially - in October 2021, consumer prices posted a 6% year-on-year rise, which is the highest inflation rate in twelve years (Official Statistics Portal – Official Statistics of Latvia, 2021). The fact that the current inflation upswing is to a large extent driven by a rise of global prices of energy and food commodities makes rising inflation a global phenomenon. Large-scale fiscal stimulus measures combined with exceptionally accommodative monetary policy since the very beginning of the Covid-19 pandemics are likely to further contribute to medium-term inflation (Bonam and Smādu, 2021). Covid-19 pandemics already increased inflation expectations and its volatility both measured by inflation swaps (Apergis and Apergis, 2021) and consumer surveys (Armantier et al., 2021).

Note that the largest increase in consumer prices so far is observed in utility bills (heat energy, electricity, natural gas), car fuel and some food products. Therefore, inflation faced by households consuming a lot of those specific products might be significantly higher than the economy-wide inflation reported by statistical offices.

Different inflation rates for different population groups is an important consideration that has largely been missing in the welfare policy debate in Latvia so far, and this paper aims to fill this gap. This paper is the first one to measure consumer price inflation differentials among household types in Latvia. It begins with analysing whether there are any systematic differences in (1) perceived inflation, and (2) structure of consumption basket between different population groups. Then, by using consumption structure of every household type and consumer price inflation by components it calculates inflation rates faced by different household types in Latvia over 2002-2021 (the choice of research period is determined by the data availability).

Some limitations of this study should be mentioned. First, official data regarding consumption structure by household types in Latvia is available only until 2019. Therefore, results of this study regarding the inflation inequality during the period of Covid-19 pandemics are still preliminary and might be adjusted thereafter. Second, consumption structure by household types is published only in a breakdown of 12 broad categories like food, transport or education. It is possible that in reality consumption structure between household types differs not only between but also within these 12 broad categories of consumer prices; this might limit the precision of inflation inequality estimates. Third, the average consumption structure by household types is observed, while it is possible that consumption structure varies significantly between households within the respective household type. Thus, further research on the topic should explore the use of (unpublished) micro data, ideally representing prices actually paid for every particular product by each household.

Literature Review

The idea that different households have different consumption structure and therefore are affected differently by inflation has a long tradition in the literature (Garcimartín et al., 2021). There is a mainstream view in the literature that low-income households and retirees tend to face higher inflation rate than the other population groups; however, the difference might not be large and this result might be specific to a particular countries and time periods.

Several studies have explored the inflation inequality subject to households' income and found that low-income households generally face higher inflation rates than high-income households (for instance, see Jaravel (2021) for evidence on the United States, Kints and Breunig (2021) for Australia, Janský and Hait (2016) for Czech Republic). These results are in line with a survey evidence that poor people are more likely than the rich ones to mention inflation as a top national concern (Easterly and Fischer, 2001), and also have higher inflation expectations (Goyal and Parab, 2019). Low-income households have both greater dispersion in experienced inflation and bigger disagreement about future inflation path (Johansen, 2014). Low-income households experience the most import price inflation (Hottman and Monarch, 2020) and their cost of living is most sensitive to the historically large fluctuations in gasoline prices (Hobijn and Lagakos, 2005). The negative correlation of inflation with income implies that inequality in real income is rising faster than inequality in nominal income (Kaplan and Schulhofer-Wohl, 2017). The negative relation between household income and household-specific inflation rate, however, sometimes is driven by a particular product category. For instance, Kints and Breunig (2021) report that in Australia inflation inequality is driven solely by alcohol and tobacco prices – after removing alcohol and tobacco, they find that there is little variation in the inflation experiences of households across the income distribution. It is also possible that inflation differentials between the poor and wealthy households are period-

specific and may reverse in later years (Drezgić, 2008). Individual households that are confronted with relatively high inflation in one year do not generally face higher inflation in the subsequent year as well (Hobijn and Lagakos, 2005).

Various studies also explored the link between inflation and age. Households with older household heads experience higher inflation on average (Kaplan and Schulhofer-Wohl, 2017). In the US, the cost of living increases were generally higher for the elderly, in large part because of their health care expenditures (Hobijn and Lagakos, 2005). In the Netherlands, retirees have experienced relatively high consumer price inflation over the last few decades, arising from relative price increases in goods, such as rent and utilities, on which single, low-income and older households spend relatively more of their budget; and relative price decreases in goods, such as leisure activities and vacations, on which these households spend relatively less (Kalwij et al., 2018). In Czech Republic, retirees faced significantly higher inflation rates in most years, which motivated Janský and Hait (2016) to consider employing retiree-specific inflation rates rather than economy-wide inflation rates in old-age pension indexation mechanism, with a remark that the possible benefits of this proposal need to be weighed against implementation and operation costs. In Japan, both inflation and inflation expectations are increasing with age; moreover, age and inflation expectations continue to exhibit a positive correlation even after controlling for the household-level inflation rate, which is likely to represent the effect of historical inflation experience on inflation expectations (Diamond et al., 2020). However, in UK inflation experienced by retirees is not significantly different to that experienced by workers over a long time period – although there are substantial differences in given years, on average retirees' inflation has been only 0.1 percentage points higher than that of workers (Lluberas, 2018). It should be noted that different households might face different consumer prices for identical consumption goods even in the same metropolitan area at a given moment. For instance, in Japan elderly people generally face higher prices than younger ones due to lower participation in bargain sales (Abe and Shiotani, 2014). Therefore, it is likely that the welfare loss caused by inflation is smaller for those households that can find better bargain prices or discount shops, compared to households that have limited choices to seek for lower prices. In the USA, however, for identical goods, prices paid are highest for middle age, rich, and large households, consistent with the hypothesis that shopping intensity is low when the cost of time is high (Aguiar and Hurst, 2007).

Regarding the data employed to study inflation inequality, several articles pointed the preference towards the use of the most granular data that is available for a researcher, which ideally should be household-level scanner data providing detailed and frequent information on purchases at the household-commodity level (Abe and Shiotani, 2014). When studying inflation inequality using such micro data (prices actually paid for every product by each household), one can find bigger inflation inequality than when employing aggregated data (such as consumption aggregates by household types; see Jaravel, 2021). There is an evidence that most of the heterogeneity in inflation experiences could come not from variation in broadly defined consumption bundles but from variation in prices paid for the same types of goods (Kaplan and Schulhofer-Wohl, 2017). Only the use of micro data would allow to explore the difference in consumer prices “paid across households for identical consumption goods in the same metro area at any given point in time” as stated by Aguiar and Hurst (2007). As the differences in inflation rates across demographic groups are small relative to the total variance of the inflation distribution, observable household characteristics might have little power to predict household inflation rates (Kaplan and Schulhofer-Wohl, 2017). It should be noted, however, that such household-commodity scanner data are not available in Latvia. Therefore, measuring inflation inequality employing the consumption aggregates by household types is a limitation of the current study. The novelty of this study is being the first in Latvia to consider different inflation experiences by different population groups, and it fills the respective gap in the literature.

Data description

To construct inflation rates that are specific to a particular household type, this study employs Central Statistical Bureau of Latvia data on household budget structure and inflation by components (Official Statistics Portal – Official Statistics of Latvia, 2021b; 2021). Note that household budget structure was not available for 2017 and 2018. Missing data for these two years were estimated using a linear interpolation method, based on the household budget structure in 2016 and 2019. Note also that the household budget structure was not available for 2020 and 2021. Data for 2020 were extrapolated using consumption structure by household types in 2019 and the change in consumer price index item weights from 2020 to 2021 (Official Statistics Portal – Official Statistics of Latvia, 2021a; note that these weights represent consumption structure of the previous year). Thus, it was implicitly assumed that all household types had similar consumption structure changes between 2019 and 2020. Since there was no data on consumption structure for 2021, it was assumed that it remained at 2020 level (for every household type). This assumption could be regarded plausible since given the ongoing Covid-19 pandemics consumption structure was not likely to change significantly between 2020 and 2021. However, it should be noted that inflation inequality estimates presented in this study for the period of Covid-19 pandemics are still preliminary and might be adjusted thereafter.

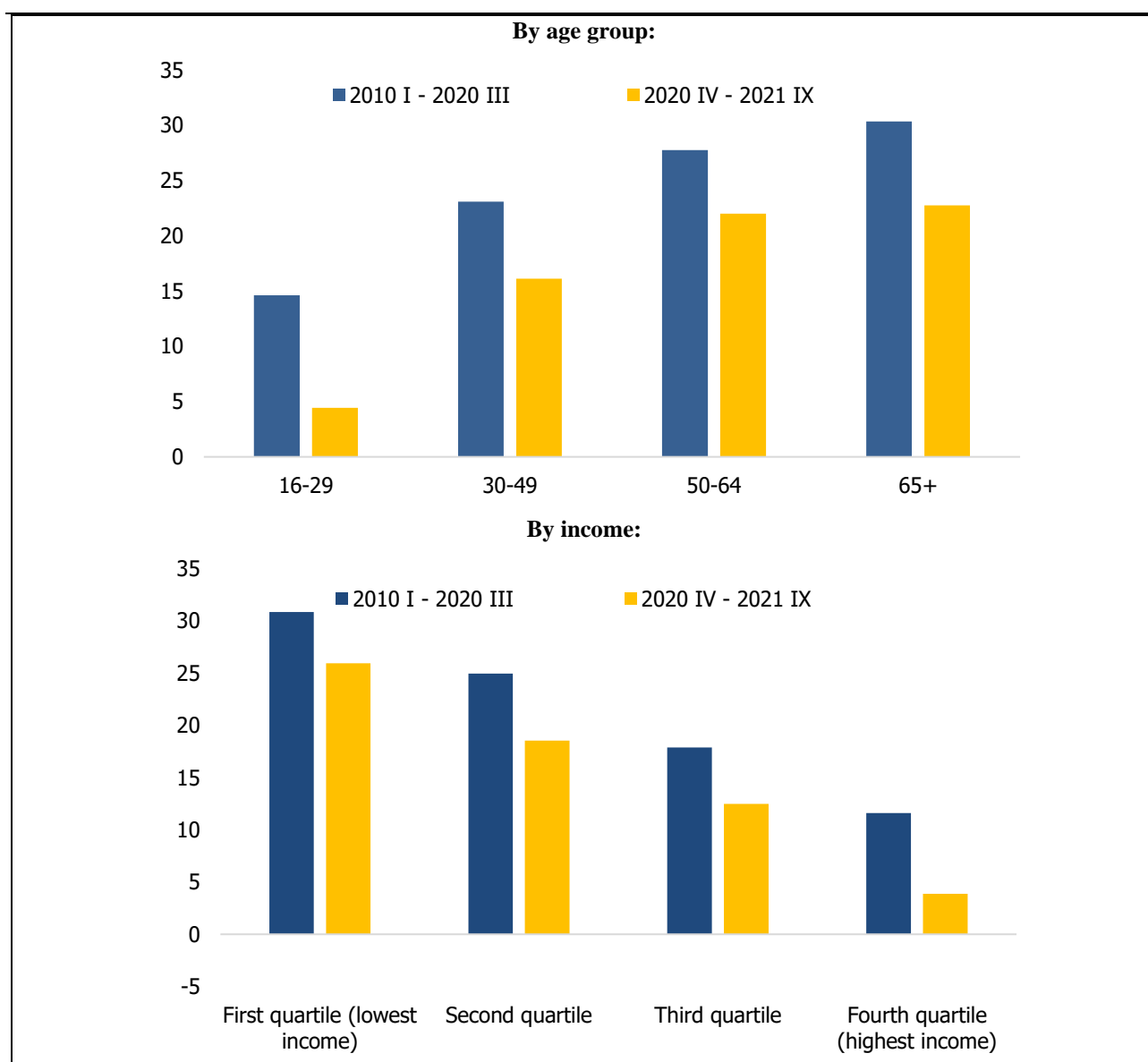
Regarding inflation perceptions by population groups, this study employs European Commission (2021) consumer survey results.

Research results and discussion

This section begins with analysing whether in Latvia there are any systematic differences in perceived inflation between different population groups by income and age. The presence of such systematic differences might indicate that these population groups actually experience uneven inflation rates. In a second subsection, consumption structure of different household types is presented, as well as inflation rate by components. Finally, third subsection analyses different inflation experiences of various household types in Latvia before and during Covid-19 pandemics.

1. Different inflation perceptions across population groups

Consumer survey results indicate that inflation perceptions vary substantially across different population groups in Latvia (European Commission, 2021). Particularly, inflation perceptions tend to increase with age and decrease with income. These differences persisted also during the Covid-19 pandemics, with low-income people and retirees being more likely to report a significant increase in consumer prices over the past 12 months and less likely to point to a consumer price decrease (Fig. 1).



Source: author's construction based on European Commission consumer survey data.

Note. The question answered by the respondents was the following: "How do you think that consumer prices have developed over the last 12 months? They have..." The possible answers are as follows: risen a lot "+"; risen moderately "+"; risen slightly "="; stayed about the same "-"; fallen "-".

Fig. 1. Perceived inflation by age group and income level (balance of replies; in Latvia)

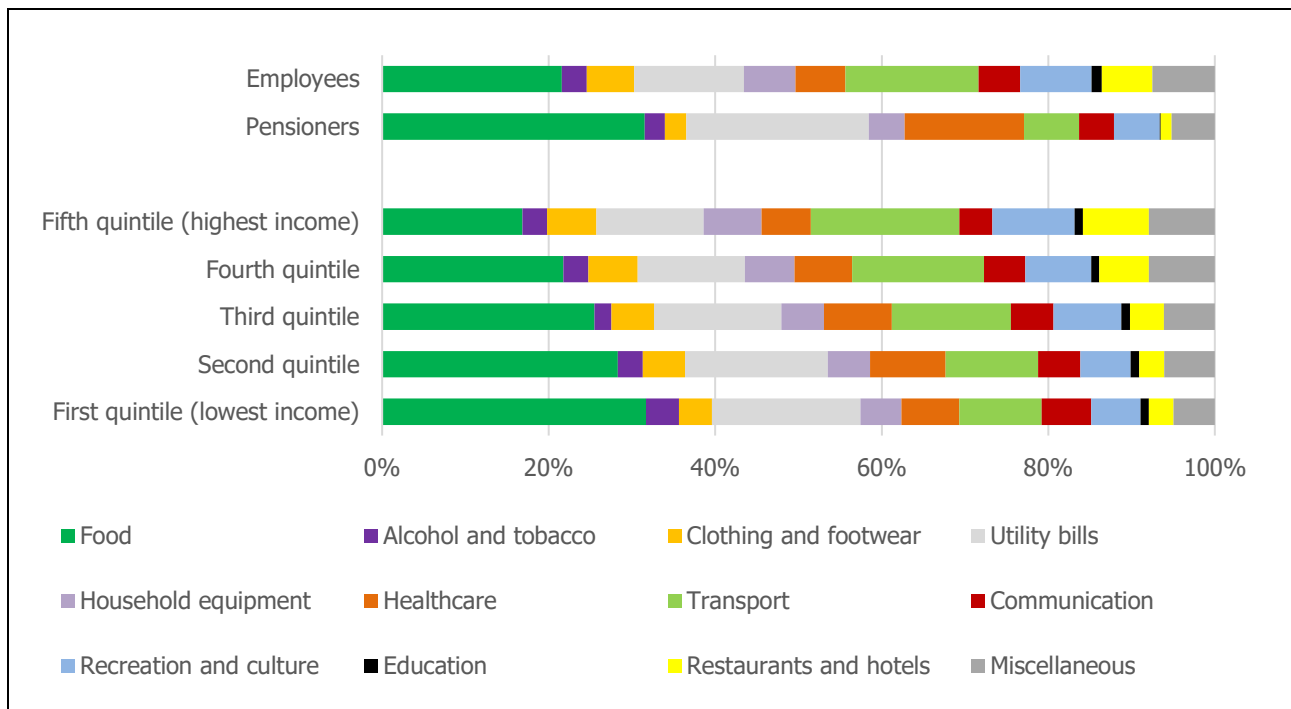
While different inflation perceptions do not necessarily mean different inflation experiences, still it is an indication that various household types might face uneven inflation rates.

2. Different consumption structure across household types

There are systematic differences in consumption basket among household types in Latvia. For instance, about two thirds of a consumption basket of retirees consist of food, utilities and healthcare, while for employees these items represent only about 40% of consumption basket. Consumption structure of retirees also differs substantially to that of young people; the latter spend relatively more money on education, clothing and footwear, leisure and cultural activities, as well as on restaurants and hotels.

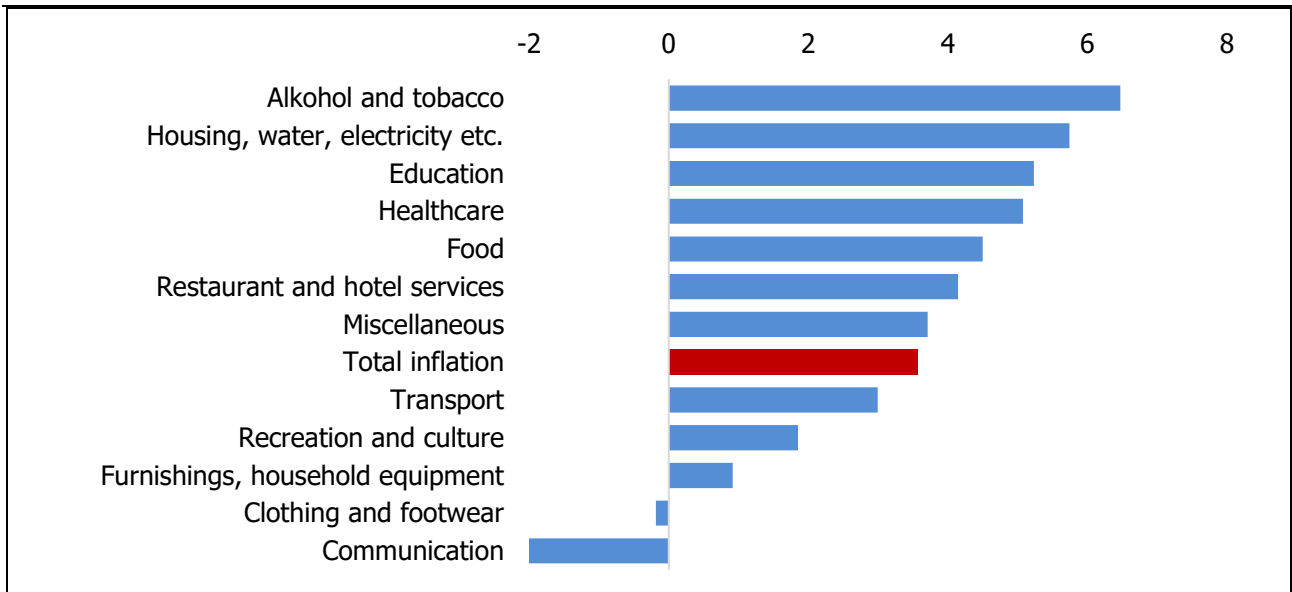
Income of the household is another important factor influencing consumption structure. The share of food and utilities (housing, water, electricity etc.) in consumption basket decreases with income: low-income households spend half of their budget on food and utilities, while the wealthiest households spend on these items less than a third of their budget. In turn, the share of transport, recreation and culture, as well as hotels and restaurants in consumption steadily increases with income (Fig.2).

Inflation differs significantly for different products. It cannot be said that a certain population group favours only those products whose prices are raising steeper or slower. For example, the product groups for which prices have risen the most over the last 20 years include both the products that dominate the consumption basket of retirees (food, utilities and healthcare), and those that appear more frequently in youth consumption (education, restaurants and hotels; Fig.3).



Source: author's construction based on Central Statistical Bureau of Latvia data.

Fig. 2. Consumption structure by socio-economic group of household (%; Latvia in 2019)

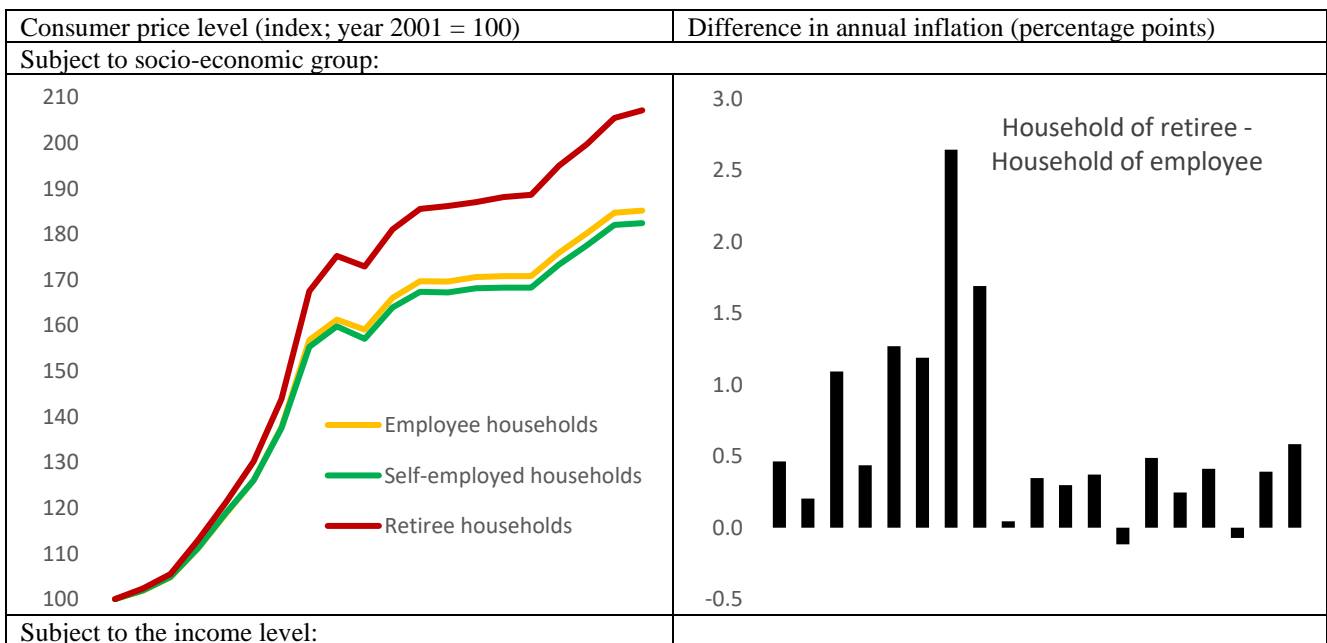


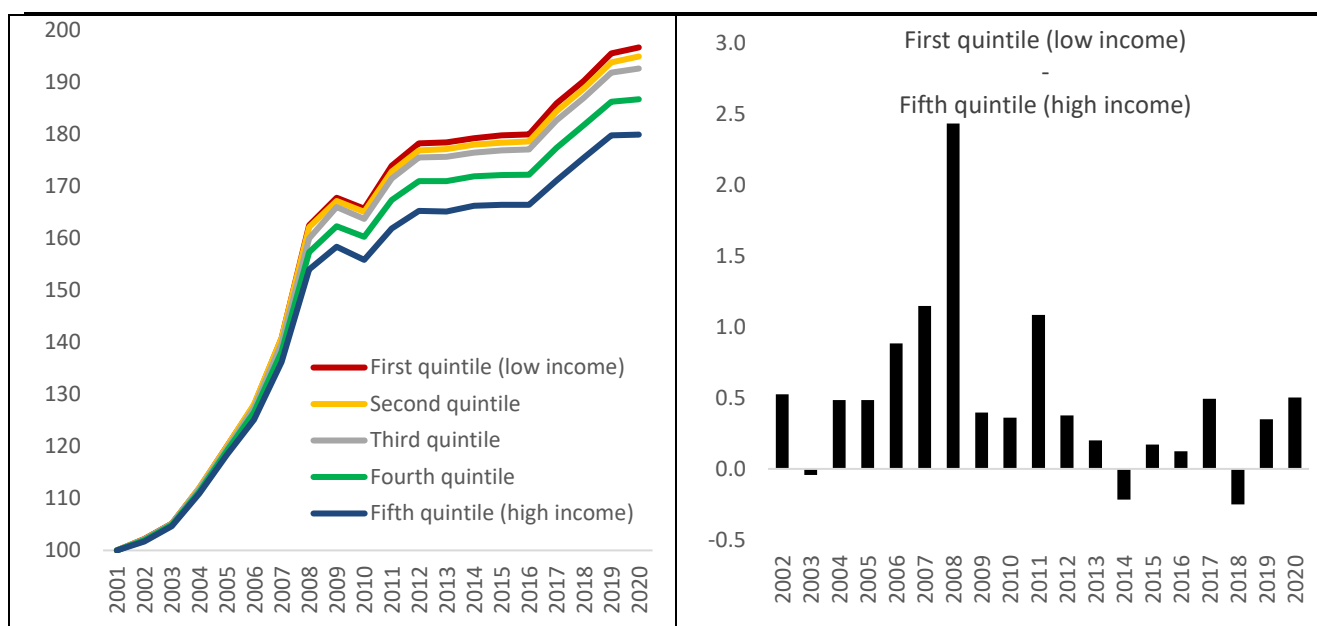
Source: author's construction based on Central Statistical Bureau of Latvia data.

Fig. 3. Consumer price inflation of the main product groups (annually, in Latvia during 2002–2020 on average)

3. Inflation inequality in Latvia

This study reveals that there are notable differences in inflation experience by household types in Latvia. Consumer price inflation is systematically higher for retirees and low-income households, which in line with both academic literature for other countries (e.g., Janský and Hait, 2016; Hobijn and Lagakos, 2005; Kalwij et al., 2018) and inflation perception differences across population groups reported by the European Commission (2021) consumer survey. For instance, the increase in prices for retiree households since the beginning of the 2000s has been 22 percentage points higher than if the household's head was employee. In turn, for the first quintile (low-income) households, the price increase was 17 percentage points higher than that for the fifth quintile (high-income) households (Fig.4).





Source: author's construction based on Central Statistical Bureau of Latvia data.

Fig. 4. Consumer price inflation differences subject to household types (Latvia, over 2002–2021)

Although the inflation inequality between different age groups has been gradually narrowing since the GFC, it widened again in 2020 with the start of Covid-19 pandemics. In 2020, inflation in retiree households was 0.6 percentage points higher than in households headed by an employee. In turn, low-income households faced by 0.5 percentage point higher consumer price inflation than wealthy households. However, situation reversed in the first nine months of 2021, with inflation faced by retiree and low-income households being slightly lower than economy-wide inflation. The latter phenomenon is largely driven by transport component (in particular, car fuel), which has bigger weight in the consumption of wealthy households and which recorded a steep price increase during 2021. It should be noted that given a notable increase in utilities prices at the end of 2021 (electricity, heat energy, natural gas) as well as further increase in global prices for food commodities, it is expected that in 2022 the highest inflation rates will be recorded among utilities and food products, which represent lion's share of consumption in retiree and low-income households. Thus, it is likely that in 2022 retirees and low-income households will again face higher inflation than the economy-wide inflation rate.

Overall, average annual inflation rate which corresponds to the average consumption basket of Latvian population was 3.5% since the beginning of the century. This research study shows that consumer price inflation rate experienced by retiree households was by half a percent higher (4.0%). In the consumption basket of retirees, a significant share consists of food, utilities and health care services – product groups whose prices grew faster than the average inflation rate. Thus, retiree inflation is systematically higher than inflation of a representative consumer published by the Central Statistical Bureau. If the old-age pensions were indexed only to economy-wide inflation, it would not be able to fully compensate retirees for the price increase of their consumption basket products. However, as the indexation of pensions also partly takes into account the average wage growth rate, the purchasing power of the average pension increases over time. At some point in the future, the average wage may not increase. Thus, inflation inequality and particularly a systematically higher inflation experience by retirees (on low-income households in general) is a topic that should be taken into account in the welfare policy debates.

Conclusions, proposals, recommendations

Conclusions:

1. Structure of consumption basket differs substantially by household types in Latvia. For instance, about two thirds of a consumption basket of retirees consist of food, utilities and healthcare, while for a household headed by employees these items represent only about 40% of consumption basket.

2. Inflation perceptions tend to be different by population groups in Latvia. Inflation perceptions collected via consumer surveys generally increase with age and decrease with income of respondents.

3. In Latvia, consumer price inflation faced by retirees and low-income households tends to be higher than the economy-wide average inflation rate, reflecting significant inflation inequality. For instance, the increase in prices for retiree households since the beginning of the 2000s has been 22 percentage points higher than if the household's head was employee. In turn, for the first quintile (low-income) households, the price increase was 17 percentage points higher than that for the fifth quintile (high-income) households.

4. Inflation differences across Latvian households increased markedly at the beginning of Covid-19 pandemics. In 2020, inflation in retiree households was 0.6 percentage points higher than in households headed by an employee. In turn, low-income households faced by 0.5 percentage point higher consumer price inflation than wealthy households.

Proposals and recommendations:

1. Different inflation experiences of various population groups should be taken into account in welfare policy debates in Latvia. For instance, one should examine a possibility to index old-age pensions with a specific inflation rate faced by retirees, not with economy-wide inflation rate that is currently employed in the indexation mechanism.

2. Future research aiming to assess inflation inequality in Latvia should use micro data. Scanner data which is able to provide detailed and frequent information on purchases at the household-commodity level can give more precise estimate on the prevalence of inflation inequality in Latvia.

Bibliography

- Abe, N., Shiotani K., 2014. Who Faces Higher Prices? An Empirical Analysis Based on Japanese Homescan Data. *Asian Economic Policy Review*, vol. 9(1), 94-115. doi:10.1111/aepr.12050.
- Aguiar, M., Hurst, E., 2007. Life-cycle prices and production. *American Economic Review*, vol.97(5), 1533–1559. doi:10.1257/aer.97.5.1533
- Apergis, E., Apergis, N., 2021. Inflation expectations, volatility and Covid-19: evidence from the US inflation swap rates. *Applied Economics Letters*, 28:15, 1327-1331. doi:10.1080/13504851.2020.1813245.
- Armantier, O., Koşar, G., Pomerantz, R., Skandalis, D., Smith, K., Topa, G., Klaauw, W., 2021. How economic crises affect inflation beliefs: Evidence from the Covid-19 pandemic. *Journal of Economic Behavior and Organization*, vol. 189, 443-469. doi:10.1016/j.jebo.2021.04.036.
- Bonam, D., Smādu, A., 2021. The long-run effects of pandemics on inflation: Will this time be different? *Economics Letters*, vol.208. doi:10.1016/j.econlet.2021.110065.
- Diamond, J., Watanabe, K., Watanabe, T., 2020. The Formation of Consumer Inflation Expectations: New Evidence from Japan's Deflation Experience. *International Economic Review*, 61: 241-281. doi:10.1111/iere.12423.
- Drezgić, S., 2008. Measuring the distributional effects of inflation in Croatia by using the LES approach. *Zbornik radova Ekonomskog fakulteta u Rijeci*, vol.26 (2), 239-256. Available at: <https://hrcak.srce.hr/30572> [Accessed 15.11.2021]
- Easterly, W., Fischer, S., 2001. Inflation and the Poor. *Journal of Money, Credit and Banking*, vol. 33(2), part 1, 160-178. doi:10.2307/2673879.

- European Commission, 2021. *Business and consumer survey database files*. [Online] Available at: https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/business-and-consumer-surveys/download-business-and-consumer-survey-data/time-series_en. [Accessed 15.11.2021].
- Garcimartín, C., Astudillo, J., Martínez, A., 2021. Inflation and income distribution in Central America, Mexico, Panama, and the Dominican Republic. *Review of Development Economics*, vol.25, 315–339. doi:10.1111/rode.12714
- Goyal, A., Parab, P.M., 2019. Modeling Consumers' Confidence and Inflation Expectations. *Economics Bulletin, AccessEcon*, Vol.39(3), 1817-1832. Available at: <http://www.accessecon.com/Pubs/EB/2019/Volume39/EB-19-V39-I3-P170.pdf>. [Accessed 15.11.2021].
- Hobijn, B., Lagakos, D., 2005. Inflation Inequality in the United States. *Review of Income and Wealth*, vol.51, 581-606. doi:10.1111/j.1475-4991.2005.00170.x.
- Hottman, C.J., Monarch, R., 2020. A Matter of Taste: Estimating Import Price Inflation Across U.S. Income Groups. *Journal of International Economics*, vol.127. doi:10.1016/j.jinteco.2020.103382.
- Janský, P., Hait, P., 2016. Inflation Differentials among Czech Households. *Prague Economic Papers, Prague University of Economics and Business*, vol. 2016(1), 71-84. doi: 10.18267/j.pep.537
- Jaravel, X., 2021. Inflation Inequality: Measurement, Causes, and Policy Implications. *Annual Review of Economics*, vol.13(1), 599-629. doi: 10.1146/annurev-economics-091520-082042.
- Johannsen, B.K., 2014. Inflation Experience and Inflation Expectations: Dispersion and Disagreement Within Demographic Groups. *Finance and Economics Discussion Series, Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, Washington, D.C.* Available at: <https://www.federalreserve.gov/econresdata/feds/2014/files/201489pap.pdf>. [Accessed 15.11.2021].
- Kalwij, A., Alessie, R., Gardner, J., Ali, A., 2018. Inflation experiences of retirees. *Journal of Pension Economics and Finance*, vol.17(1), 85-109. doi:10.1017/S1474747216000202.
- Kaplan, G., Schulhofer-Wohl, S., 2017. Inflation at the household level. *Journal of Monetary Economics*, vol.91, 19-38. doi:10.1016/j.jmoneco.2017.08.002.
- Kints, M., Breunig, R., 2021. Inflation Variability Across Australian Households: Implications for Inequality and Indexation Policy. *Economic Record*, vol.97, 1-23. doi:10.1111/1475-4932.12575.
- Li, S., Wei, L., Xu, Z., 2017. Dynamic asset allocation and consumption under inflation inequality: the impacts of inflation experiences and expectations. *Economic Modelling*, vol. 61(C), 113-125. doi: 10.1016/j.econmod.2016.11.013.
- Lluberas, R., 2018. Life-Cycle Expenditure and Retirees' Cost of Living. *Fiscal Studies*, vol.39, 385-415. doi:10.1111/1475-5890.12164.
- Official Statistics Portal – Official Statistics of Latvia, 2021. *Consumer price indices and changes by commodity groups*. [Online] Available at: https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__VEK__PC__PCI/PCI020m [Accessed 15.11.2021].
- Official Statistics Portal – Official Statistics of Latvia, 2021a. *Consumer price index weights by commodity groups*. [Online] Available at: https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__VEK__PC__PCI/PCI010/ [Accessed 15.11.2021].
- Official Statistics Portal – Official Statistics of Latvia, 2021b. *Composition and structure of consumption expenditure by socio-economic group average per household member per month*. [Online] Available at: https://data.stat.gov.lv/pxweb/en/OSP_PUB/START__POP__MB__MBI/MBI060 [Accessed 15.11.2021].