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Contents

Household Economic Resilience

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Abstract

How are households coping with high inflation in 2022? We show that, while many households remain resilient, fragilities exist. Increases in food and energy prices alongside rising rents have a much greater impact on household finances than interest rate increases on variable rate mortgages. This reflects the smaller share of mortgage interest in household expenditure relative to food and energy, among other factors. In a 'severe' scenario involving further price increases for essentials, our analysis shows that households in a more precarious financial position with limited savings buffers (around 15 per cent of all households) would see 44 per cent of their disposable income used for spending on *just* this limited set of items. Targeted, temporary supports for more exposed households will support consumption of essential goods and services until price rises abate and/or real incomes rise.

[1] Irish Economic Analysis. With thanks to Rob Kelly, Martin O'Brien, Thomas Conefrey, Rea Lydon, Daragh Clancy and Barra Roantree for comments and to the ICW team in the CSO for granular data access. Remaining errors are our own. The views expressed here do not necessarily reflect the views of the Central Bank of Ireland nor the European System of Central Banks. Corresponding author: tara.mcindocalder@centralbank.ie

1. Introduction

Irish households have faced two unexpected economic shocks in recent years: first the pandemic and now high inflation. Inflation is expected to remain high throughout 2022. Given the scale of the price increases, nominal incomes will likely only adjust gradually. This raises questions surrounding the economic resilience of households and the associated macroeconomic implications, which we answer in this *Article*. From the perspective of central banks, resilience is important for a number of reasons. Financial resilience, related to household indebtedness, is important for financial stability. Economic resilience, related to household income, spending and wealth alongside indebtedness, influences aggregate consumption, saving and investment.

We begin by establishing the economic position of Irish households in 2020 – that is prior to the high inflation shock – and show how this varies at different points in the *joint* income, consumption and wealth (YCW) distribution. We then describe the likely impact of price driven increases in expenditure. We do this in three steps. First, we use the YCW framework to categorise households into four groups based on their ability to meet expenses, their assets and their ability to save. Second, we identify three measures of economic resilience, which include a measure of households' spending on "essentials" (limited here to food, energy and rent or mortgage interest) out of disposable income, indebtedness and savings buffers. Third, we simulate household spending and income forward to 2022 and run two cost of living scenarios to assess the impact on economic resilience.

We show that the economic resilience of Irish households improved on average and across the YCW distribution, both up to and during the pandemic, as a result of incomes growing faster than spending between 2018 and 2020. However, our analysis shows that households are not equally exposed to consumer price increases. While the most economically precarious households spend roughly two fifths of their disposable income on essentials, the most affluent spend around a quarter. We also find that increases in food, energy and rent prices have a much greater impact on household finances than interest rate increases on variable rate mortgages, reflecting the smaller share of household expenditure spent on mortgage interest. Ultimately, whilst many households (over 85 per cent) are fairly resilient to cost of living increases, fragilities remain. This is especially true for those who simultaneously report that they spend all their income on regular basics, including large portions of their income on food and energy and have low levels of liquid savings (approximately 15 per cent of households). These households are dissavers, more indebted and have lower incomes. They are also more likely to be younger, female-led, unemployed or working within the home, and less likely to be owner-occupiers than more affluent households.

The remainder of this *Article* is structured as follows. Section 2 describes the key stylised facts on the distribution of net wealth (defined as gross wealth minus debt) in 2020. Section 3 considers household spending and how exposed Irish households are to price increases on items that are not easy to substitute or defer spending on, such as food,

energy and housing. In Section 4, we categorise households according to their *joint* YCW distribution economic resilience. We also describe three measures of economic resilience. Section 5 presents the results of our cost of living simulations. Finally, Section 6 concludes.

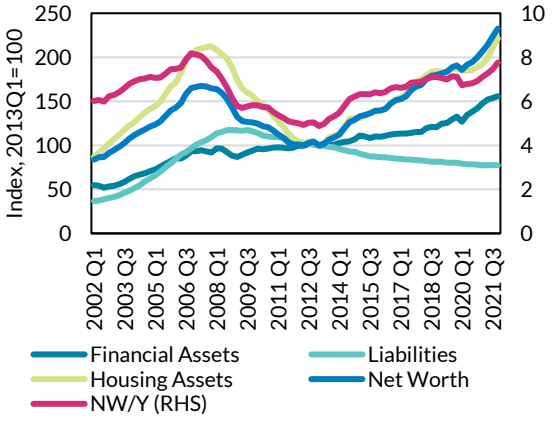
2. Household Net Wealth

The median net wealth of Irish households in 2020 was €193,100 (CSO-HFCS, 2020).[2] However, net wealth differs across age, home-ownership and education (Appendix Table A1). Households where the responding adult is over 45, owns their home, is employed (or receiving private retirement income) or has tertiary education have net wealth above the median.

In aggregate, household net wealth in Ireland has increased substantially since the first wealth survey in 1987 (Callan, Nolan and Whelan, 1993) and since the first HFCS was conducted in 2013 (CSO, 2015). Looking at developments over the different waves of the HFCS, 2013 was a net wealth low point for households. This nadir followed the financial crisis in 2008 and associated falls in the price of real assets (namely housing) which dwarfed the deleveraging households undertook after 2008 and that continues to the present (shown by the falling liabilities in Figure 1). Since then, net wealth has increased steadily. The same is true for the ratio of net wealth to income (NW/Y), which can be interpreted as a price-to-earnings ratio calculated for households. As asset prices vary more than liabilities, they are the main driver of fluctuations in the NW/Y ratio (Diwan, Duzhak and Mertens, 2021).

Both real and financial asset prices drive changes in the net wealth profile of Irish households, in aggregate

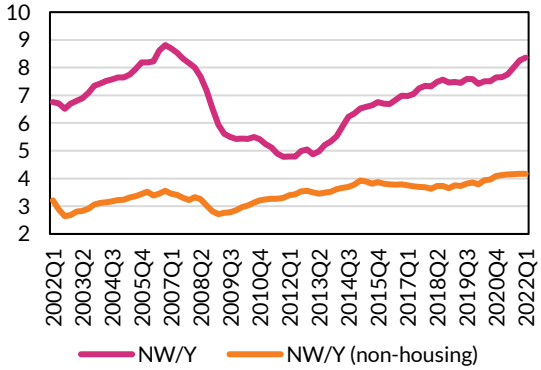
Figure 1: Household net wealth to gross disposable income and indices of components



Source: CSO, Central Bank of Ireland and authors' calculations.

Aggregate net wealth dominated by property changes

Figure 2: Aggregate and non-housing net wealth as a share of disposable income



[2] For more information on the survey, see the CSO's 2022 publication on the HFCS 2020. HFCS 2020 marks the first time that data was supplemented with administrative data from the Central Bank's Central Credit Register (CCR). The 2020 data therefore represents a break in some HFCS time series, particularly those related to household debt. Other HFCS metrics on household income and consumption are less affected.

In Ireland, both real and financial asset price changes play a role in determining the net wealth of households relative to their income level, and it is the increase in the prices of both which has driven the growth in net wealth in recent years. In aggregate, house prices (representing the large majority of real assets) dominate (Figure 2) but the value of the financial assets held by Irish households has also increased fairly steadily from 2009 (orange line in Figure 2). This has continued throughout most of the recent period.

While increases in both real and financial asset prices have contributed to the growth in aggregate net wealth, individual households differ substantially in their choice of assets and in how these assets are financed. For example, households at the top of the net wealth distribution hold relatively more financial than real assets and are substantially less leveraged than households in the middle and bottom of the wealth distribution. Nevertheless, real estate dominates, comprising over two thirds of total assets for all net wealth groups.

The growth in aggregate net wealth observed since 2013 has been accompanied by changes in the share of wealth owned across the wealth distribution. As shown by Table 1, all but the top 20 per cent of households have experienced an increase in their share of net wealth between 2013 and 2020. This has resulted in a reduction in the overall Gini coefficient on net wealth.

Table 1: Net wealth shares across the wealth distribution (%) and Gini coefficient, 2013-2020

	2013	2018	2020
1st and 2nd quintiles	-2.1	2.7	3.1
3rd quintile	9.2	9.9	11.1
4th quintile	20.1	19.4	20.8
5th quintile	72.7	67.8	65.2
Gini (net wealth)	0.75	0.67	0.65

Source: CSO and authors' calculations.

The underlying mechanisms of this change relate to differences in portfolio composition and the reduction of property negative equity, which is of particular importance for the bottom two quintiles (Lydon, Horan and McIndoe-Calder, 2020). Financial asset price changes for wealthier households and borrowing to facilitating asset acquisition for middle wealth households have also played a role.[3]

3. Household Spending

A key factor typically influencing the level of spending by households on goods and services is prices. Economists refer to this as the price elasticity of demand for a good or service: the change in the quantity demanded due to a unit change in the price level. However, for some goods and services, the price elasticity of demand is low due to

[3] Arrigoni, Boyd and McIndoe-Calder (forthcoming) discuss and explore these mechanisms in more detail.

households being unable to easily substitute or defer this spending (Anderson et al., 1997). For example, food, energy and housing services (interest payments on mortgages and rent payments) fall into this category.[4] In this *Article*, we group and define these four items as "essential goods and services".[5] This is a narrow definition of essential consumption, excluding much spending that households may – rightly – view as similarly necessary. Table 2 shows median spending on a wider set of goods and services, including the principle portion of mortgage repayments and a catch-all category for other regular spending, which includes childcare costs, non-energy utilities, etc. In our definition of essentials, we exclude the principle paid off against a mortgaged property, as this represents a household accumulating an asset or saving (rather than consuming). In addition increases in interest rates do not affect the principle payment but rather the cost to service the debt. Rental costs on the other hand are included as household consumption. We focus on this narrow definition of spending in the scenario analysis in Section 5, acknowledging that this does not include other important household spending.

We use non-equivalised disposable income in examining how household spending relates to available household income. Income equivalisation accounts for differences in household size and composition. It is useful when data on spending is unavailable (EUROSTAT, 2020). However, in our case, the HFCS provides total household spending data.

Table 2: Median nominal spending on regular and essential goods and services, 2013-2020 (monthly)

	Food	Energy	Rent (for those paying rent)	Mortgage payments (for those with mortgages)			Other regular consumption
				Interest	Principle	Interest and Principle	
2013	€650	€102	€500	€298	€480	€874	€264
2018	€652	€137	€583	€281	€533	€844	€469
2020	€652	€138	€628	€235	€627	€895	€481
Change: 2018 to 2020	0%	0.7%	8%	-17%	18%	6%	3%

Source: CSO - HFCS, SILC; and authors' calculations.

Note: Food includes food consumed at home and outside of the home. The latter accounts for under a fifth of food spending for the median household, consistent with its share in food spending in 2018 and up from 13 per cent in 2013.

[4] HFCS includes a question on household spending on utilities (such as electricity, water, gas, telephone, internet and television). HBS 2015 shows that across the income distribution households spend between 48 and 52 per cent of their total utilities spending on gas and electricity. We assume 51 per cent of utilities spending relates to gas and electricity in HFCS 2020.

[5] While the HFCS contains less detailed and less accurate spending information than the Household Budget Survey (HBS), it provides a reasonable benchmark for the relative spending of households across the YCW distribution. This is primarily due to its timeliness. HFCS data are available for 2020 whereas the last HBS was carried out during 2015 and 2016. See also Le Blanc and Lydon (2019) which shows that the HFCS estimates of spending on individual items is a close match for HBS.

Household spending on essentials

The HFCS 2020 fieldwork occurred between July 2020 and January 2021. Pandemic restrictions during this time may have impacted household spending, as Table 3 shows. Monthly consumer spending on regular items (which includes food and energy as well as other non-durable consumption such as childcare, health, and travel) across households was down 4.1 per cent in 2020 compared with 2018.

In contrast, the data shows that monthly spending on all essentials – using our narrow definition – was up only marginally, by around 3 per cent in 2020 compared to 2018. For example, there was little difference in the nominal level of spending on food and energy in 2020 compared with 2018, a change of 0 and 0.7 per cent at the median, respectively. This is consistent with the assumption that these goods can be considered *essential*. Households continued to spend on these items during the pandemic – at pre-pandemic levels – despite total regular spending falling.

Table 3: Median nominal spending (on regular and essential goods and services) and average income, 2013-2020 (monthly)

	Regular consumption[1]	Food, energy, rent and total mortgage payments[2]	Essentials (food, energy, rent, mortgage interest)[2]	Disposable income[3]
2013	€1,200	€1,172	€1,026	€3,586
2018	€1,400	€1,137	€1,042	€4,423
2020	€1,343	€1,232	€1,071	€4,900
Change: 2018 to 2020	-4%	8%	3%	11%

Source: CSO – HFCS, SILC (income only); and authors' calculations.

Note: [1] Regular consumption is defined as: recurrent household spending on all non-durable consumer goods and services. It includes all household expenses (food, utilities, etc.) but excludes consumer durables (e.g. cars, household appliances, etc.), rent and housing payments, loan repayments, insurance policies, renovation, etc.

[2] Food includes food consumed at home and outside of the home. The latter accounts for under a fifth of food spending for the median household, consistent with its share in food spending in 2018 and up from 13 per cent in 2013.

[3] SILC disposable income, mean. SILC disposable income used here as comparable disposable income figures unavailable for 2018 and 2013 HFCS. HFCS 2020 disposable income (which compares well to SILC income) used for all other income metrics in the *Article*.

For households with mortgage debt, median debt interest payments were 17 per cent lower in 2020 than in 2018, reflecting the deleveraging households underwent over this time period as well as falling mortgage interest rates (Table 2). The principle component of mortgage repayments increased in value between 2013 and 2020 by an offsetting amount (18 per cent). This reflects a number of factors including higher values of house purchases for new buyers over the period and existing borrowers increasing the relative size of their principle repayments as they move towards the end of their loan term (a mechanical characteristic of the amortisation process). Rents were up around 8 per cent at the median, reflecting strong rental increases between 2018 and the start of the pandemic. However,

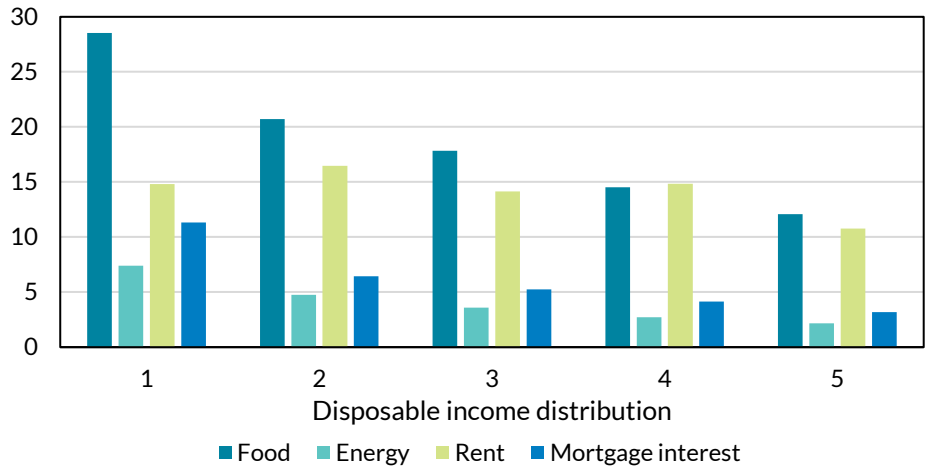
household incomes (in nominal terms) were up substantially (11 per cent on average) over the same period to reach €4,900 (CSO, 2022).[6]

Essentials spending across the income distribution

The share of disposable household income spent on essential goods and services (as defined in this *Article*) differs across the income distribution.[7] This means that households' ability to meet price increases for essentials out of current income depends on their position in the income distribution. Figure 3 shows spending on essentials is falling, as a share of disposable income, across the distribution for three of the four spending categories (food, utilities and mortgage interest).[8] Considering renting households, Figure 3 also indicates that the share of income spent paying rent is increasing between the first and second quintiles, flat in the middle, and still close to one tenth of disposable income for higher income households. Meanwhile, for those with mortgages, mortgage interest payments as a share of income generally falls across the income distribution.

Households at the bottom of the income distribution spend a larger share of their income on essentials than households at the top of the distribution

Figure 3: Share of disposable income spent on essentials by income group in 2020, % (median)



Source: CSO and authors' calculations.
Note: Disposable income used to calculate spending shares and income quintiles. Rent and mortgage interest payments share in income is conditional on households either paying rent or having a mortgage on their home, respectively.

Households at the bottom of the income distribution spend over 44 per cent of disposable income on essentials, while households at the top of the distribution spend less than one

[6] The Survey of Income & Living Conditions' (SILC) is the official income source in Ireland, but the income reference periods between SILC and HFCS are not the same. The SILC reference period is the 12 months preceding the survey year, while the HFCS reference period is the 12 months immediately preceding the date of interview.
[7] HFCS provides information on household income (market income plus transfers) gross of taxes and other social contributions. We use a tax-benefit model (Lydon and McIndoe-Calder, 2017) to calculate household disposable income. Across the income distribution our calculated disposable income matches the CSO's SILC data well.
[8] Absolute values of spending in these categories are rising in income (Arrigoni, Boyd, McIndoe-Calder 2022).

fifth. Given that consumer price increases in 2021 and 2022 have been particularly large for energy and food items, this implies that lower income households are more exposed to the ongoing inflationary pressures.[9]

Whilst all households spend on food and energy, spending on housing services depends on whether a household pays rent, services a mortgage or owns their home outright. It is therefore, important to be mindful of differences in tenure across the income distribution. The HFCS shows that over half of households in the lowest quintile own their own home outright whereas in the fifth quintile, only 36 per cent do (Table 4). Just under 8 per cent of households in the lowest income quintile have a mortgage compared to 51 per cent of households in the fifth quintile. This highlights that, households at the lower end of the income distribution are more exposed to increases in the price of food, energy and rents than to changes mortgage servicing costs.

Table 4: Home-ownership, share of renting and mortgaged households across the income distribution, %

	Renting households	Owner occupier households - no mortgage	Owner occupier households - mortgage
1st	42.0	50.1	7.9
2nd	37.5	46.8	15.7
3rd	30.2	38.3	31.5
4th	20.2	34.0	45.8
5th	13.0	36.1	50.9
All	28.6	41.1	30.4

Source: CSO and authors' calculations.
Note: Disposable income used to calculate income quintiles.

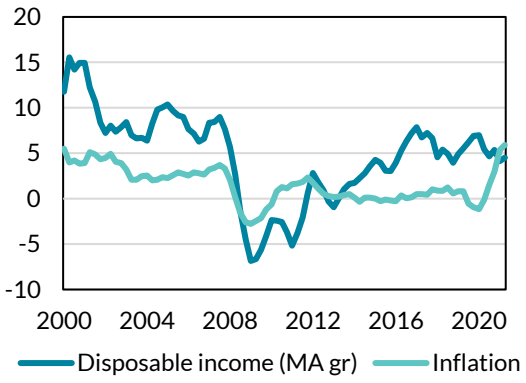
4. Economic Resilience

Currently, real disposable income is being eroded by inflation (Figure 4). Falling real incomes mean that households must rely on other strategies to meet unexpected changes to their spending or income. In the first instance, households will typically spend more income (save less) or use their stock of available savings.[10] While Irish households are saving at a high rate (Figure 5 and Saupe and Woods, 2022), savings built up during the pandemic are falling. These aggregate trends are consistent with previous work by Arrigoni, Boyd and McIndoe-Calder (2022) which examined the financial buffers, in the form of both savings and net liquid assets, accumulated by households during the pandemic. Their findings show that while many households were able to save substantially more than pre-pandemic, the buffers of some households (particularly those at the lower end of the income distribution) are more limited and may have already been drawn upon.

[9] This is consistent with Lydon (2022) which uses HBS spending data.
[10] HFCS shows that the most common strategy employed by households (43 per cent) in order to meet income shortfalls is to spend out of savings (Appendix Table A2).

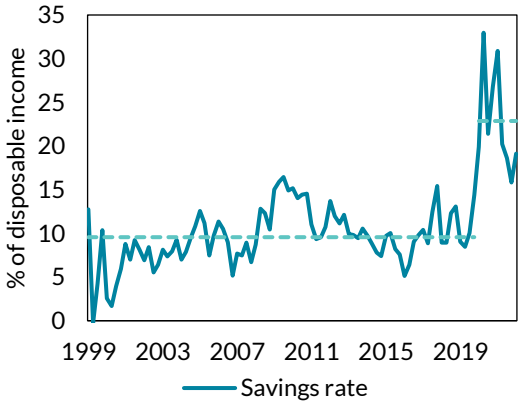
Real income is falling, whilst savings rate remains elevated

Figure 4: Nominal disposable and inflation, growth rates



Source: CSO
Note: Disposable income subtracts taxes, payments for interest, social and pension contributions and transfers. Growth rate for disposable income (4-quarters moving average).

Figure 5: Households savings rates and pre-pandemic average



Source: CSO Institutional Sector Accounts.
Note: Dashed lines are pre-pandemic (1999 Q1-2019 Q4) and post-pandemic (2020Q1-2022Q1) averages.

Joint Income Consumption and Wealth Distribution

We categorise households into four groups according to their *joint* income, consumption and wealth distribution, using HFCS 2020. This categorisation allows us to examine the economic resilience of households against shocks taking all available resources into account. This is important for understanding the effects of shocks for different groups of households and in turn, how the shocks affect aggregate outcomes of interest such as consumption, investment, financial stability, monetary policy transmission and the distribution of income and wealth. For example, differences between households have been shown to have implications for policy effectiveness (Ahn et al., 2017, Kaplan et al., 2018; Auclert, 2019; Kopiec, 2019).[11]

The measure of wealth used in our categorisation divides gross wealth into money held in savings accounts ('savings') and all other wealth. The distinction between liquid and illiquid wealth is important because the liquidity of net wealth affects the ability of households to finance expenditure out of accumulated assets (Bayer et al., 2019). For example, housing assets are illiquid in the short term, meaning that households are less able to use housing wealth than more liquid savings account balances to finance spending needs in the event of an unexpected real income shock. The HFCS confirms this. Using a measure describing how likely households are to adjust their spending if they were to experience an income shock, those with less liquid wealth adjust their spending more than those with more liquid wealth, all else equal.

[11] Evidence on this includes the role of financial buffers on the marginal propensity to consume out of additional income (Jappelli and Pistaferri, 2014) as well as the sensitivity of household exposure to interest rate changes and labour income fluctuations on the transmission of monetary policy (Slacalek, Tristani and Violante, 2020).

The measure of consumption used is regular consumer spending on non-durables. As defined above, this includes expenditure on essentials (food, energy and housing) as well as other non-durable consumption such as childcare, health, and travel.

To implement the YCW framework we define four groups of households, based on the approach of Kaplan and Violante (2014).

1. *"Precarious, limited buffers"*: Households who cannot meet regular spending out of income (self-reported), savings or other wealth
2. *"Precarious, illiquid assets"*: Households who cannot meet regular spending out of income or savings, but do have other wealth
3. *"Affluent, not savers"*: Households who may not meet regular spending with income, but have savings of at least one month of regular spending
4. *"Affluent, savers"*: Households who can meet regular spending with income and can also save

The application of the YCW through the four groups of households described here is the first time the YCW framework has been applied to Ireland. The approach is beneficial as it allows us to harness the richness of the HFCS data in a more comprehensive manner than if the income, consumption and wealth distributions are assessed in isolation.

Reflecting the improvement in the economic environment between the 2013 and 2018, Table 5 shows the share of economically precarious households (both those with limited buffers and illiquid buffers) fell dramatically from 43 per cent of households in 2013 to one in four in 2018. This share fell further between 2018 and 2020 to just one in seven households. Fully 85 per cent of Irish households were able to meet regular spending out of income or liquid savings by 2020, indicating a significant improvement between 2013 and 2020. On the other hand, over 14 per cent of households in 2020, equating to approximately 180,000 families, report that they already spend all their income on a regular basis, and have no savings.

Table 5: Share of households across the joint income, wealth and consumption distribution over waves of the HFCS, %

	2013	2018	2020
Precarious, limited buffers	26.6	6.7	5.7
Precarious, illiquid buffers	16.0	17.4	8.5
Affluent, not savers	24.6	34.5	32.5
Affluent, savers	32.7	40.0	53.1
All	100.0	100.0	100.0

Source: CSO and authors' calculations.

Between 2013 and 2018, a higher level of liquid buffers is the main factor behind the fall in the share of economically precarious households. During this period, the share of households with adequate liquid buffers to cover regular spending exceeded, by 2.5 times, growth in the share of households able to meet these expenses with income. However,

between 2018 and 2020 this trend is reversed, with income growth driving the further decline in the share of economically precarious households.[12] Average annual income growth for HFCS households was over 5 per cent between 2018 and 2020, up from 4 per cent in the preceding five years and outstripping increases in regular expenditure since 2013.[13] As a result, fewer households are categorised as economically precarious in 2020 than 2018. In contrast, between 2018 and 2020 growth in illiquid assets has contributed little to the decline in the number of economically precarious households.

Table 6: Economic characteristics of households across the joint income wealth consumption distribution in 2020, average (unless otherwise stated)

	Precarious, limited buffers	Precarious, illiquid buffers	Affluent, not saving	Affluent, saving	Total
Age	45.1	50.3	54.4	50.8	51.6
Female (%)	57.0	44.7	42.5	37.7	41.0
Single headed households (%)	37.8	33.3	32.5	29.1	31.1
Principle Economic Status* (%)					
Employed	27.0	44.2	50.5	62.8	55.2
Unemployed	19.1	12.4	6.2	4.1	6.4
Retired	7.7	17.0	29.6	23.1	23.8
Home duties	20.8	13.0	7.5	5.5	7.7
Other inactive	25.4	13.4	6.1	4.4	6.9
Owns own home (%)	5.7	67.0	75.5	76.7	71.4
Mortgage on own home (%)	3.7	34.1	28.3	33.9	30.4
Number of incomes per adult in the household	0.64	0.84	1.11	1.11	1.06
Marginal propensity to spend (%)	51.6	47.9	46.7	43.1	45.1
Disposable income (€ median)	€32,682	€40,632	€41,924	€55,724	€47,102
Median net wealth (€)	-€1,016	€106,186	€201,876	€244,246	€193,320
Debt to asset ratio (median)	2.61	0.23	0.20	0.21	0.24
Debt service to disposable income > 30% (%)	4.96	13.69	14.09	12.67	12.67

Source: CSO and authors' calculations.
* Principle economic status achieved by household reference person.

Table 6 shows the characteristics of each household group. Compared to affluent households, economically precarious households are younger, more likely to be headed by women and more likely to be single headed. Compared to affluent households, the head of the household is also more likely to be unemployed, working solely within the home or otherwise outside the labour force. They are less likely to be retired or own their homes, and if they do, economically precarious households are more likely to have mortgages on their homes. In addition, economically precarious households are more likely to have fewer incomes per adult household member, lower disposable household income levels, a higher

[12] Between 2018 and 2020, the share of households able to meet regular spending with income increased at double the rate of the increase in the share of households able to do the same with savings.
[13] It is worth noting that pandemic restrictions impacted spending patterns in 2020. For example, HFCS data shows that in 2020 less than one quarter of households reported overall expenses as above normal, compared with three fifths of households in 2013.

propensity to spend out of additional income and lower levels of net wealth. Indebtedness (measured as debt service greater than 30 per cent of disposable income), however is lowest for economically precarious households, and flat across the remainder of the YCW distribution, according to the HFCS in 2020.

Economic resilience in 2020

Economic resilience can be characterised in several ways. For example, indebtedness is a common approach with debt ratios and measures such as number of loans commonly used. Alternatively, economic resilience can be viewed through the lens of financial buffers such as the amount of savings or extent a household is credit constrained. A further approach is to focus on the strategies households use to meet non-durable consumer expenses when income is insufficient. For example, the share of households asking family and friends for financial help.

In this *Article*, we characterise economic resilience using three measures. These are:

1. *"Essentials share in income, %"*: Share of monthly disposable income spent on essential expenditure (food, energy, rent or mortgage interest payments)
2. *"Highly indebted, %"*: Share of households with mortgage debt service greater than 30 per cent of disposable income
3. *"Saving buffers, months"*: Months of savings to cover essential expenditure (food, energy, rent or mortgage interest payments)

These measures combine elements of the different possible approaches in the literature and in doing so, provide a holistic indicator of economic resilience. Table 7 presents 2020 figures for the three economic resilience measures for each of the four household groups, prior to the start of the cost of living shock (yet well into the pandemic shock).

Table 7: Economic resilience of households across the joint distribution of income, consumption and wealth in 2020, median

	Precarious, limited buffers	Precarious, illiquid buffers	Affluent, not saving	Affluent, saving	Total
Essentials share in income, %	38.9	33.8	28.5	25.3	27.5
Highly indebted[1], %		19.3	14.7	10.0	12.5
Savings buffers[2], months	0.27	0.70	8.77	12.18	7.53

Source: CSO and authors' calculations.
Note: Empty cells mean that cell sizes are too small to report. Disposable income used to calculate spending shares.
[1] Share of households with mortgage debt service greater than 30 per cent of disposable income, mean.
[2] Months of spending on essentials that can be met with saving, median.

Compared to affluent households, economically precarious households in 2020 spent a higher share of income on essentials. For example, the median economically precarious household with limited buffers spends almost two-fifths of their income on essentials in 2020, compared to around a quarter for a median affluent, saving household. Economically precarious households with mortgages were more likely to be highly indebted than

affluent households. Table 7 also shows that economically precarious households had more limited savings than affluent households, to cover expenses during periods of income shortfalls.[14] While the median affluent, saving household in 2020 could cover its essential expenditure for over 12 months, a median economically precarious household had less than one month's coverage.

5. Cost of Living Scenario Analysis

In this Section, we combine the 2020 HFCS with more recent macroeconomic data to simulate the impact of price increases on the household economic resilience measures outlined in Section 4. In doing so we are able to outline how different households across the *joint* distribution of income, consumption and wealth may have been affected by the rise in inflation and reduction in real incomes over recent quarters. To further understand the underlying mechanisms and potential policy implications, we generate a 'baseline' scenario derived from realised data up to June 2022 and a further 'severe' scenario with more significant price increases and reductions in real incomes.

Baseline scenario

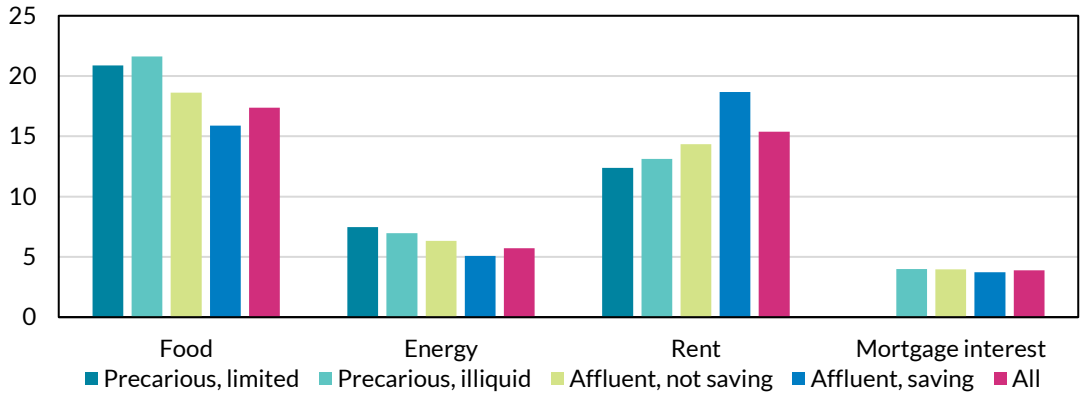
For the baseline scenario we apply realised food, energy and rent price increases between October 2020 and June 2022 of 7.3 per cent, 74.3 per cent and 13.7 per cent, respectively from the CSO's Consumer Price Index (CPI). No changes are applied to mortgage interest rates.[15] We increase disposable incomes by 7.8 per cent, based on the observed outturn from the quarterly National Accounts.[16] House prices and the value of other assets are held constant. This is because it is participation in savings and other assets that impact the categorisation of households according to the YCW framework, not the value of the non-savings assets. Therefore, rises in the value of housing or other assets does not affect either the categorisation or the economic resilience measures used here.

According to our simulation, the median household in mid-2022 spent 17.4 per cent of their disposable income on food and 5.7 per cent on energy, with substantial differences across the YCW distribution (Figure 6). Housing costs depend on tenure, with renters paying over 15 per cent of their income on rent and those who have mortgages paying less than 4 per cent of their income on servicing this debt (mid-2022 median).

[14] Note that the aggregate value of savings in 2020, as measured by the HFCS (€50.2bn) is less than the value obtained from aggregate data such as the bi-annual Conduct of Business Return (€58.7bn) or the Quarterly Financial Accounts (€62.1bn). However, while there may be level differences, the distribution of these savings is consistent across the sources.
[15] Mortgage interest rates were essentially flat between 2020 and mid-2022. Between 2020Q3 and 2022Q2 retail interest rates on lending for HMR mortgages increased by between 0.04 percentage points (new lending) and 0.05 percentage points (existing lending) (Central Bank of Ireland).
[16] Allowing income growth to vary across the distribution of income in 2020 and/or sector of employment will see affluent households income rising relatively more than precarious households, on average.

The median share of monthly income spent on servicing debt is lower – across the YCW distribution – than the share spent on other essentials

Figure 6: Disposable income spent on essential goods and services across the YCW distribution, share (per cent), mid-2022



Source: CSO and authors' calculations.
Note: Disposable income used to calculate spending shares. Rent and mortgage interest payments shares are conditional on households either paying rent or having outstanding mortgage debt. Mortgage interest rates assumed not to change, based on observed retail lending rates over 2020 to mid-2022.

Examining the economic resilience measures, Table 8 below shows that collectively, spending on food, energy, interest payments and rent account for 30 per cent of disposable income across all households when price and income increases between October 2020 and June 2022 are applied to HFCS households. This varies significantly across the YCW distribution. Economically precarious households spend roughly two-fifths of their income on these essentials, while more affluent households spend a lower share (closer to 30 per cent) of their income on these essentials, even whilst spending more in absolute terms.

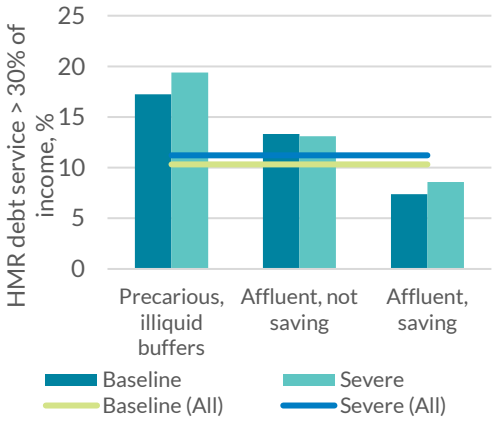
Table 8: Economic resilience, severe scenario across the YCW distribution

	Scenario	Precarious, limited buffers	Precarious, illiquid buffers	Affluent, not saving	Affluent, saving	Total
Essentials share in income, %	Baseline	42.7	37.4	30.9	27.2	30.0
	Severe	46.3	41.3	34.7	30.7	33.7
Change (pp)		3.60	3.90	3.78	3.47	3.65

Source: CSO and authors' calculations.
Note: Empty cells mean that cell sizes are too small to report. Disposable income used to calculate spending shares.

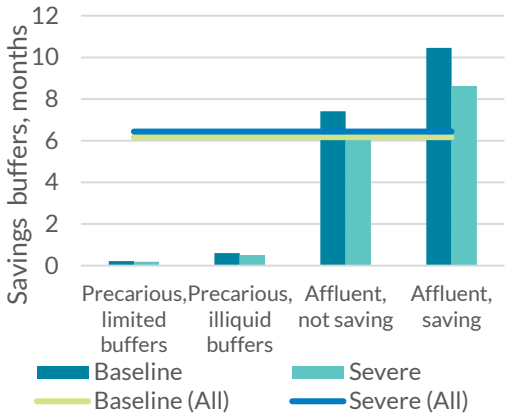
Examining the other two measures of economic resilience (Figures 7 and 8), it is clear that resilience increases at the upper end of the YCW distribution. In the baseline scenario, over one in six economically precarious households with mortgages use at least 30 per cent of their disposable income repaying this debt, higher than the 10.3 per cent of highly indebted households across all YCW groups. Likewise, Figure 8 indicates that savings buffers (number of months' worth of spending on essentials that households can finance out of savings account balances) vary substantially across the distribution. Economically precarious households have less than a week's worth of spending on essentials as liquid savings, with this rising to between 7 and 10 months' worth for affluent households, under the baseline scenario.

Figure 7: Highly indebted households, baseline and severe scenarios (%)



Source: CSO and authors' calculations

Figure 8: Savings buffers: month's coverage of essentials spending (months)



Source: CSO and authors' calculations.

Severe scenario

Examining the effect on households of additional shocks to the prices of essential goods and services in the absence of real income growth illustrates further how resilient households are to rising prices. The severe scenario we implement is as follows. In addition to the price increases seen to June 2022, we apply further price increases to food (10 per cent), energy (25 per cent) and rents (5 per cent). We also increase the interest rate for variable rate borrowers by 200 basis points and disposable incomes in line with the Quarterly Bulletin.[17] We utilise the latest market expectations on interest rates with judgement to inform the food and energy price growth used.

Table 8 shows the increase in spending out of income on essentials across the YCW distribution relative to the baseline. The increase for all households is close to 4 percentage points. Economically precarious households with limited buffers see fully 46 per cent of their disposable income used for spending on a limited set of essential goods and services, under the severe simulation compared to just under 43 per cent in the baseline. This corresponds to additional monthly expenditure on essentials of €150 (€160) for economically precarious households (all households), that is the change between the baseline and severe scenarios. Even affluent households who do not save regularly see their spending on essentials increase to over one-third of disposable income.

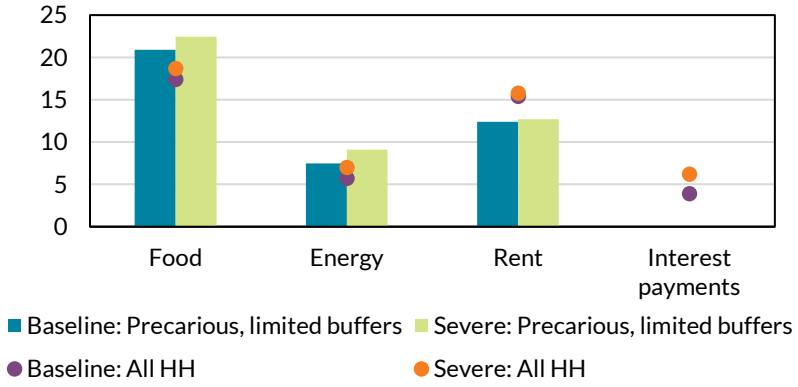
With the exception of housing costs, economically precarious households spend a substantially larger share of gross income on food and energy than the median for all households (Figure 9). Under the severe scenario, the relative share of spending on these two essential items increases further. Therefore, if prices were to rise further (as under

[17] Interest rate increases apply to existing mortgage borrowers on variable rate (tracker and SVR) contracts. No change is made to the interest rates for fixed rates mortgages or any other debt held.

this scenario), this group would have a greater need for additional income to maintain the quantity of essentials consumed.[18]

The severe scenario has a greater impact on economically precarious households

Figure 9: Share of income spent on essentials by economically precarious, limited buffer households, pp



Source: HFCS and authors' calculations.
Note: Disposable income used to calculate spending shares. Rent and mortgage interest payments share in income are conditional on households either paying rent or having outstanding mortgage debt.

Figure 9 also shows that for households with mortgage debt, the share of income spent on interest payments increases from 3.9 per cent in 2020 to 6.2 per cent under the severe scenario. This still leaves interest payments accounting for a smaller share of household income than any of the other essential items – food, energy or rent. This reflects the low level of interest rates on (mortgage) debt by households in Ireland and the relative sizes of consumer price increases, in particular for food, energy and rents, that households are already facing.[19] Indebtedness does not deteriorate markedly, rising just 0.9 percentage points at the median for all mortgaged households (Figure 7). This is due to the relatively low level of mortgage interest payments in total essentials spending.

In terms of economic resilience in the severe scenario – as measured by savings buffers – the median household can cover its spending on essentials using savings for over 6 months (Figure 8). This rises to between 6 and almost 9 months in the severe scenario for affluent households and falls dramatically to less than a fortnight's worth of savings to meet higher prices for economically precarious households.[20]

Discussion

These findings highlight the disparities in economic resilience of households depending on their position in the YCW distribution. Some households, particularly those which are more affluent, are in a better position to weather further price rises. In contrast,

[18] The relative size of each essential in overall spending, as well as the size of the price increases across the total basket of essentials determines the additional income needed to maintain the quantity of essentials consumed, given potential price rises.
[19] Median interest rate on variable mortgage rates in HFCS 2020 is 2.3 per cent.
[20] Whilst financial buffers were expanded up by majority of households to HFCS 2020 (due to high saving rates prior to and during the pandemic), households may have had to use these buffers already to meet price increases in the absence of real wage growth in 2022.

economically precarious households with limited buffers or illiquid assets (just under 15 per cent of all households) are more exposed to higher prices. In 2020 and before the period of high inflation these households report spending all their income on regular basics and almost no savings. In 2020 48 per cent of economically precarious households had less than €500 worth of cash savings (20 per cent had less than €50).[21] Under the severe simulation implemented in this *Article*, it is likely that this group has reduced economic resilience. The results are consistent with previous Central Bank research for Ireland by Adhikari (2022).

However it is important to bear in mind that the results presented in Table 8 do not account for the full complexity of household financial decision making. For example, households may expect additional negative shocks in the future and thus exhibit 'buffer stock saving behaviour' where they are cautious about drawing down assets too much in the face of uncertainty, particularly if a target saving level exists (Carroll, 1992). Moreover, spending on items such as energy display low price elasticities of demand (Labandeira et al., 2017) due to their essential nature.[22] This suggests that households are likely to continue to consume such goods irrespective of how many months of essentials spending coverage they have.

The YCW framework used in this *Article* is based on data collected during the Pandemic. This may affect the generalisability of the results. In aggregate, whilst the household savings rate remain elevated compared to pre-pandemic levels, the level of household deposits has started to moderate recently. This suggests that although income growth in 2021 is likely to have compensated many households for higher inflation, this may not be the case in 2022 and 2023, in which case the share of precarious households may increase. Affluent, non-saving households reported holding €8,700 in savings in 2020. In addition, allowing income growth to vary across the distribution of income and/or sector of employment for the baseline and severe scenarios would see affluent households' income rising relatively more than precarious households, on average. This means that the share of essentials out of income and the share of highly indebted households reported in Table 8 are lower bounds for the proportion of economically precarious households.

Finally, the severe scenario assumes mortgage interest rates for fixed rate borrowers remain unchanged. Fixed rate mortgages accounted for just over two-fifths of all mortgages in the second half of 2020, of which two-thirds had less than two years left of their fixed rate term (Central Bank of Ireland, 2022). If we relax this assumption and increase the interest rate of all fixed rate mortgages (as well as variable rates) in our severe scenario, we find the largest sensitivities are for economically precarious households with mortgages. The median share of income spent on servicing their mortgage increases from

[21] Affluent households reported over €11,000 in median cash savings in 2020.
[22] The meta-analysis carried out in Labandeira (2017) finds an average short-term price elasticity of demand for household energy consumption of between -0.20 and -0.26 across energy types. This finding of price inelastic demand for household energy indicates limited sensitivity of the findings in this *Article* – which assumes price elasticity of demand for all essentials of zero - to the responsiveness of households to energy price increases in the short-term.

6.2 per cent in the baseline scenario to 8.1 per cent in the severe scenario. For these households, this this brings the share of income spent on mortgage interest in line with the share of income spent on energy. However, in aggregate, relaxing the assumption on the treatment of fixed rate mortgages in the severe scenario sees an increase in spending on essentials across all groups by roughly one half of a percentage point to 34.2 per cent of disposable income (up from 33.7 per cent using the more restrictive interest rate assumption). On the whole, the sensitivity of our results to changes in assumptions on mortgage servicing costs is small relative to the impacts of the food, energy and rental price increases.

6. Conclusion

In this *Article*, we draw on data from the latest wave of the HFCS to first describe the economic position of Irish households in 2020 and then, to examine the impact of a cost of living increase on the *joint* distribution of income, consumption and wealth (YCW). In 2020, over 85 per cent of households were able to meet regular spending out of income or cash savings, up from 76 per cent in 2018. Across the YCW distribution, almost one quarter of Irish households were considered to be in an 'economically precarious' financial situation in 2018, falling to under 15 per cent by 2020. This improvement has been driven largely by incomes growing faster than spending - up to and during the pandemic.

From the beginning of 2022, economic conditions have changed again with high inflation putting pressure on household real incomes. Scenario analysis in this *Article* reveals three key findings. First, expected increases in food, energy and rent prices have a much greater impact on household finances than expected increases to the interest rate on mortgages. This reflects the relative share of spending across the basket of essential goods and services, the size of the relative price changes and the share of Irish households with mortgages. Second, we find that households are differentially exposed to consumer price increases. HFCS 2020 shows that while the most economically precarious households spend roughly two-fifths of their disposable income on essentials (defined as food, energy, rent and mortgage interest payments), the most affluent spend one quarter.

Third, whilst many households (over 85 per cent) are fairly resilient to cost of living increases, fragilities remain. This is particularly true for economically precarious households, who we show are dissavers, and more likely to be younger, female-led, unemployed or economically inactive, and renting than affluent households. These economically precarious households account for approximately 15 per cent of all households in 2020, or roughly 180,000 families. The simulation analysis indicates their economic resilience is likely to deteriorate further if prices continue to rise because essentials make up a high share of their consumption. Combined with their available income and low level of savings, a further deterioration in resilience is expected if prices of essentials increase further. These already marginal households have limited financial means to meet additional price increases.

Our results show that there are groups of households much more exposed than others to price rises in essential goods and services. Temporary policies which target support to

those households who spend large proportions of their income on essentials may be more effective than universal supports, or indeed more permanent supports. Not only are a temporary and targeted set of policy measures more fiscally sustainable, they will limit the knock-on inflationary effects. Further, given the low price elasticity of demand for essentials compared with non-essential spending, supporting the level of household consumption of essential goods and services may indirectly support consumption of non-essentials, by allowing the most affected households more room for regular spending. Finally, policies to reduce energy consumption in the medium to long term are more likely to successfully reduce energy usage by households, a policy priority in terms of overall transition to net zero.

The analysis in this *Article* does not take into account the impact of measures introduced in Budget 2023. These include additional once-off payments for those in receipt of social protection benefits, credits to households for energy and supports to renters and students. Together these provide substantial additional support to household finances.[23] In particular, those supports that are effectively targeted should help to alleviate the impact of high inflation on the most financially precarious households.

[23] See: https://www.esri.ie/news/one-off-budget-measures-will-insulate-most-households-from-inflation-this-winter

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Appendix

Table A1: Net wealth in 2020, by demographic characteristics

	Median net wealth	Mean net wealth	Share of total net wealth
	€	€	%
State	193,100	353,600	100
Age of Reference Person			
Under 35	23,000	98,800	3.4
35-44	88,900	203,600	12.8
45-54	228,400	393,400	23.3
55-64	318,700	528,500	27.7
65+	291,600	442,900	32.8
Tenure Status			
Owner-occupied	303,900	493,900	97.2
Rented or rent free	5,300	32,500	2.8
Principle Economic Status[1]			
Employed	194,283	371,982	56.5
Unemployed	4,685	97,171	1.8
Retired	309,000	454,718	30.9
Other inactive	97,854	232,629	10.9
Education[1]			
Primary or below	140,083	213,169	7.8
Less than Tertiary	184,167	312,311	42.6
Tertiary	238,444	444,501	49.5

Source: CSO and authors' calculations.

Note: [1] Principle economic status and highest education achieved by household reference person.

Table A2: Economic resilience – Strategies used to meet non-durable consumption expenses when income insufficient, 2020

		Precarious, limited buffers	Precarious, illiquid buffers	Affluent, not saving	Affluent, saving	Total
Sold assets	Mean	1.0	2.4	1.2		1.4
Took out loan/credit card/overdraft	Mean	23.8	40.8	16.0		23.0
Spent out of savings	Mean	27.2	21.7	55.1		42.5
Asked for help	Mean	21.6	27.1	8.8		15.3
Left bills unpaid	Mean	48.0	20.8	20.6		25.6

Source: CSO and authors' calculations.

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