ISI OTTAWA 2023
64TH WORLD STATISTICS CONGRESS

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WELCOME.

Outline

- Background

- Data sources

- Estimation process

- Results and analysis

- Future developments

Background

- The Distributions of Household Economic Accounts (DHEA) are part of larger effort at Statistics Canada to go beyond GDP and measure economic well-being

- Distributions are produced for income, consumption, saving and wealth
    - Not joint distributions – done with separate microdata sources for income/consumption and wealth
    - Available by income quintile, age, household composition, housing tenure, province, main source of income
    - Wealth also done by wealth quintile

- Compiled by analysts within the national economic accounts in collaboration with
    - Micro-modelling experts, survey analysts, and methodologists

- Prior to 2020 produced on annual frequency

- As of Q1 2020 produced on quarterly frequency

- Currently released approximately 90 after reference period

Data sources

Data Source	Reference period available	Input to
Social Policy Simulation Database and Model (SPSD-M)	Quarterly data up to current period based on microsimulation model	Income, consumption
Tax data	Annual data lagging reference year by 15 months	Income
Canadian Income Survey	Annual data lagging reference year by 15 months	Income
Survey of Household Spending (bi-annual)	Annual data lagging reference year by 24+ months	Consumption
Labour Force Survey	Monthly data available before the DHEA reference period	Wages
Survey of Financial Security (tri-annual)	Annual data lagging reference year by 24+ months	Wealth
Survey of Financial Security (Recalibrated)	Annual survey recalibrated to new demographic and economic trends for each year up to the current reference year	Wealth
Consumer credit registry data (purchased from external provider)	Quarterly data available 1.5 months after reference period	Wealth (liabilities only)

Social Policy Simulation Database and Model

Non-confidential, statistically representative database with:

A micro-simulation model which:

Data for more than 1,000,000 composite individuals residing in over 300,000 households in ten Canadian provinces

A series of weight files and growth parameters allow analysts to use the database to represent the population of other years

Full family structure for each individual on the database allows one to identify the familial relationships between all household members

Approximately 600 variables covering detailed socio-economic and demographic data as well as information on weekly employment histories
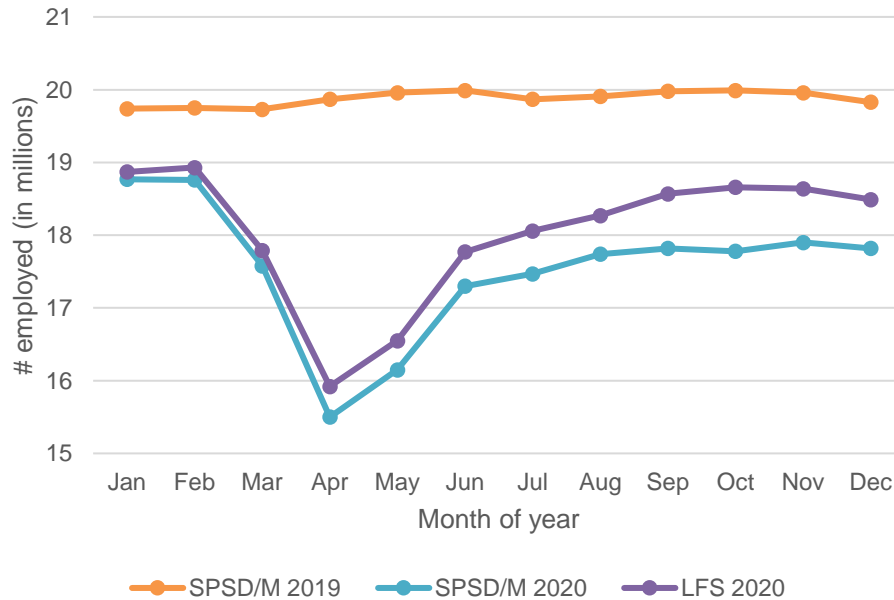
Calculates taxes and transfers for individuals and families

Was updated in 2020 to include a dynamic auto-regressive logistic labour adjustment model based on the Labour Force Survey to predict the likelihood of employment in the current month
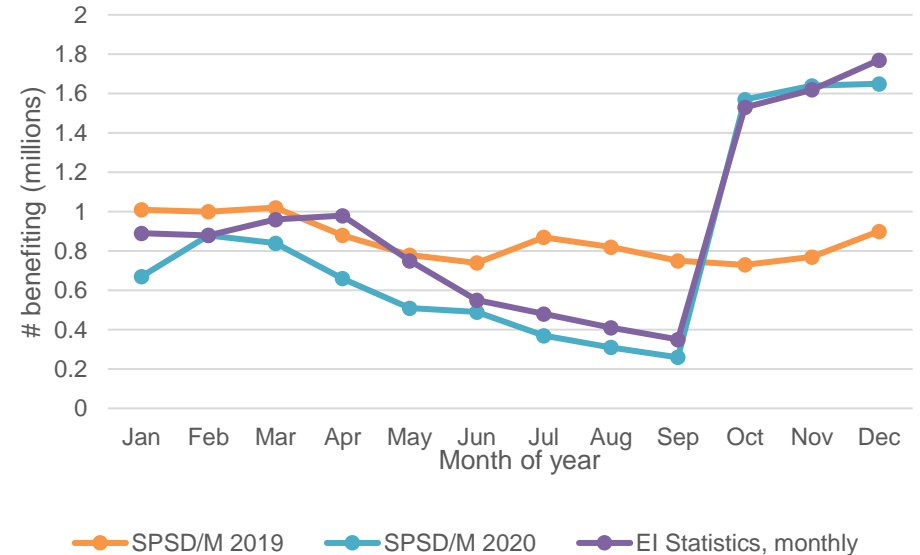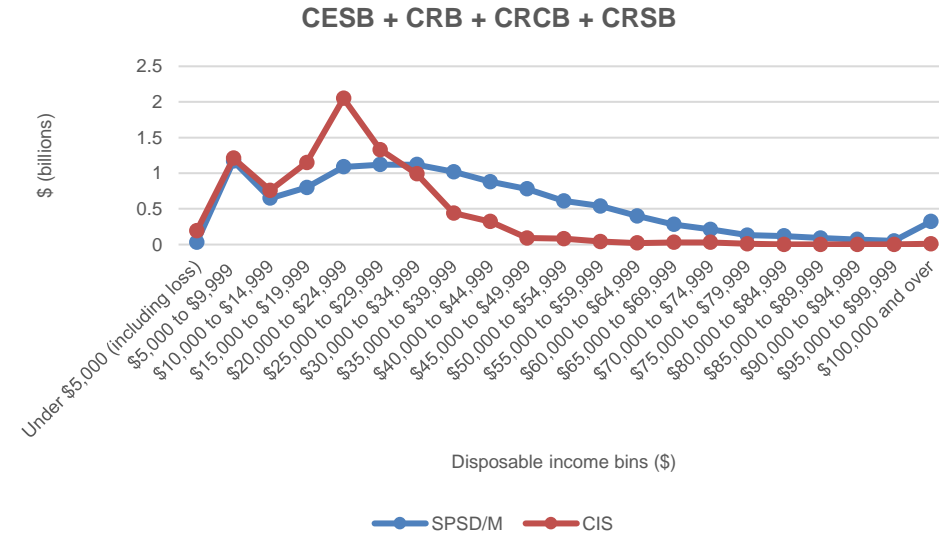
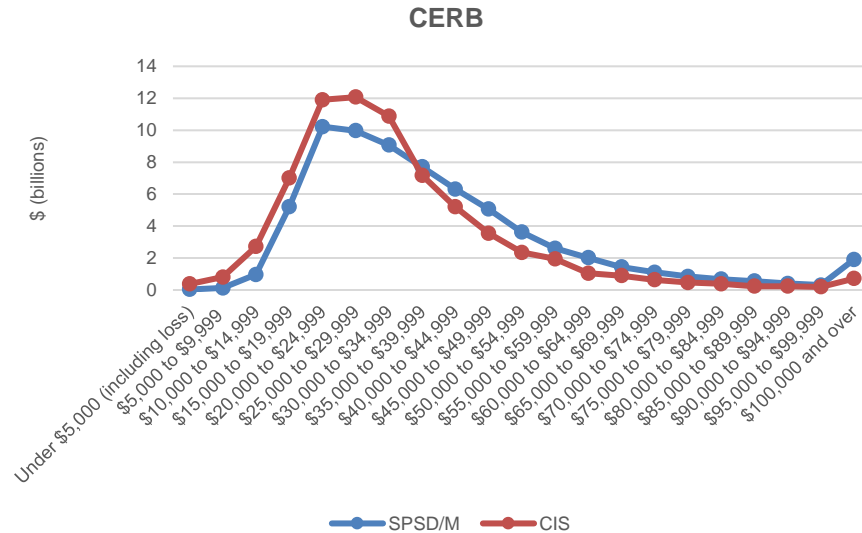# SPSD-M nowcasting during the pandemic

Total employment by month of year

Employment insurance beneficiaries by month of year, all benefit types

Covid-19 support befits modelled vs. collected

CERB

CESB + CRB + CRCB + CRSB
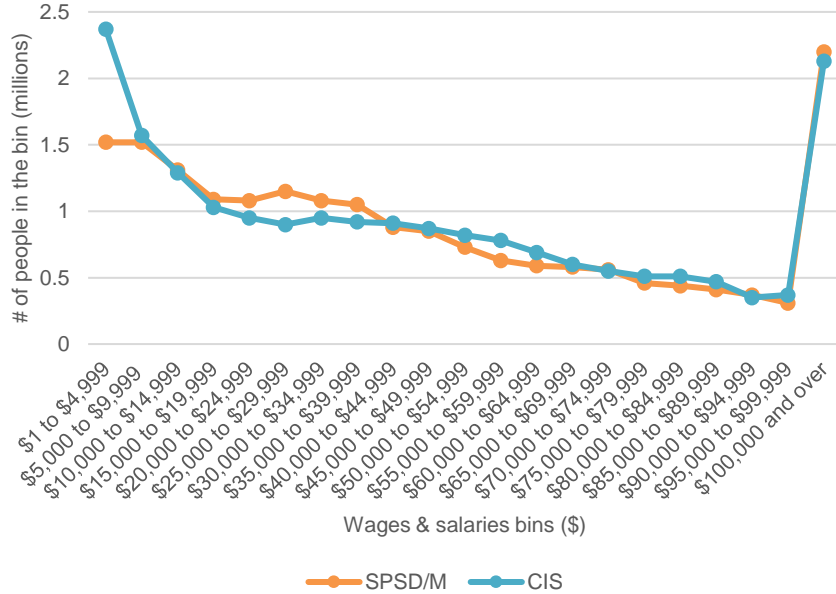
Disposable income bins ($)

- Canadian Emergency Recovery Benefit – employment based
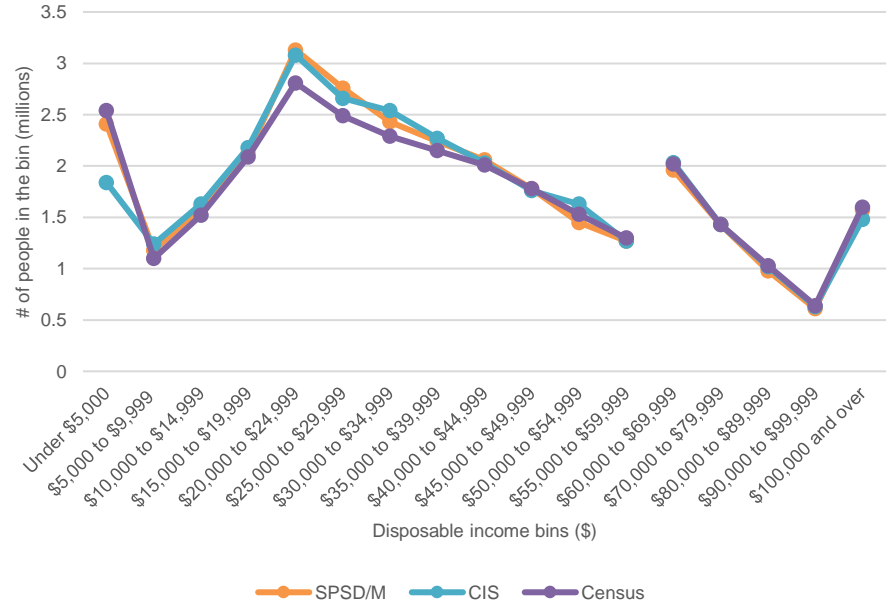- Other Covid-19 support benefits not tied to employment status more difficult to model

SPSD-M income distributions on point

Distribution of wages and salaries

Distribution of disposable income

Credit bureau data

- Purchased detailed sub-aggregated quarterly data on household liabilities from one of the credit rating agencies in Canada

- We worked with provider to define, and quality assure household concept

Outstanding balance and total payments within the period

Type of credit product
- Mortgage
- Credit card
- Other loans

Province of residence

Household composition

Housing tenure
- Own
- Rent

Age of household head

sub-divided each income quintile into specific demographics groups and then assigned proportionally to each

Estimation process

Mapping	• Map household level aggregates to macro values • Investigate inconsistencies and conceptual differences
Adjustments	• Make adjustments to correct for conceptual differences • Adjust micro data to meet macro totals
Distributions	• Apply adjusted micro data distributions to macro values • Household level analysis
Analysis	• Analyze the resulting macro data distributions

Concordance between SNA and SPSD (2021)

Relative to SNA, SPSD excludes:

- Employers' pension contributions for employees
- Imputed rental income
- Sheltered investment income
- Deductions for property income paid re: interest on mortgages and credit cards

| Income component	SPSD	SNA	Coverage (SPSD/SNA)
	millions of dollars		Percent
Compensation of employees	1,076,059	1,269,913	85
Wages and salaries	1,046,686	1,098,343	95
Other income / Employers' social contributions	29,373	171,571	17
Plus: payments from non-residents	…	3,053	…
Less: payments to non-residents	…	7,922	…
Plus: Self-employment / Mixed income	60,501	217,268	28
Non-farm self-employment	58,584	89,065	66
Farm self-employment	1,917	5,144	37
Rental income, actual and imputed	…	123,059	…
Plus: Property income received	96,873	215,883	45
Dividends	63,570	77,963	82
Interest, excluding capital gains	33,304	53,162	63
Investment Income disbursements	…	62,375	…
Unfunded pension liability	…	3,771	…
Implicit income – deposits and insurance	…	18,612	…
Less: Property income paid (interest charges)	…	66,922	…
Equals: Market income / Balance of primary income	1,233,433	1,631,273	76
Plus: Current transfers received	408,642	439,495	93
Less: Current transfers paid	341,615	620,877	55
Equals: After-tax income / Disposable income	1,300,460	1,449,891	90

Income gap narrows over the pandemic

Share of total household disposable income	Average (2010 to 2019)	2020	2021	2022
		%		
Lowest income quintile	6.3	7.4	7.1	7.1
Second income quintile	12.6	13.5	13.3	13.4
Third income quintile	17.2	17.5	17.6	17.4
Fourth income quintile	23.3	23.6	23.0	23.0
Highest income quintile	40.7	38.1	39.1	39.1
Gap between top two and bottom two income quintiles	45.1	40.8	41.7	41.6

- The second and the third income quintiles saw largest increases in wages and transfers
- Wage increase partially driven by hours worked (many people in essential service areas)
- Lowest income quintile comprised of many household that do not have wages but instead rely on pension income – not eligible for many employment based Covid support benefits

Change in wages and salaries (2018=100)

Lowest income quintile — Second income quintile — Third income quintile — Fourth income quintile — Highest income quintile
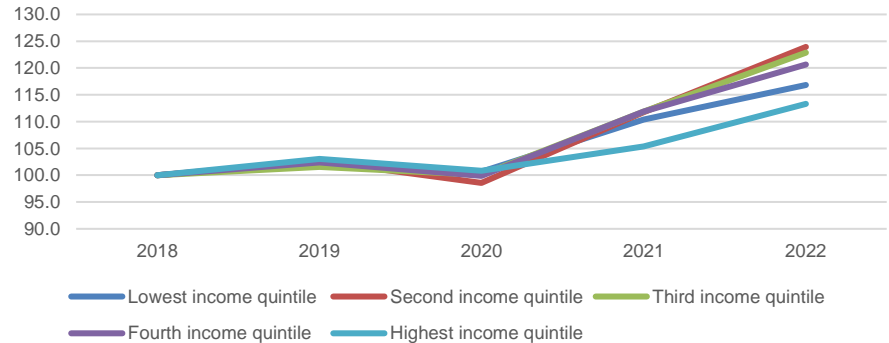
Change in current transfers received (2018=100)

Lowest income quintile — Second income quintile — Third income quintile — Fourth income quintile — Highest income quintile
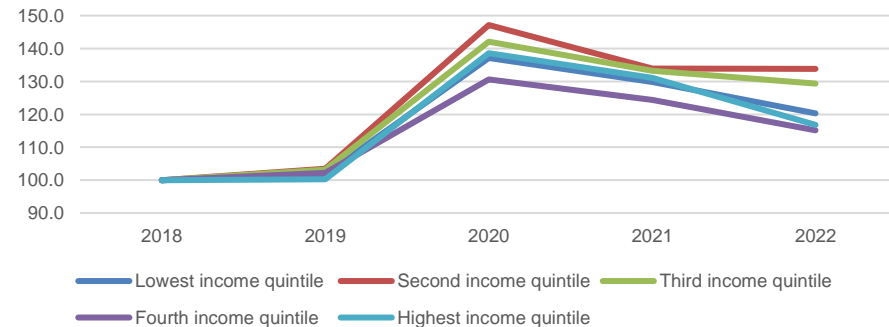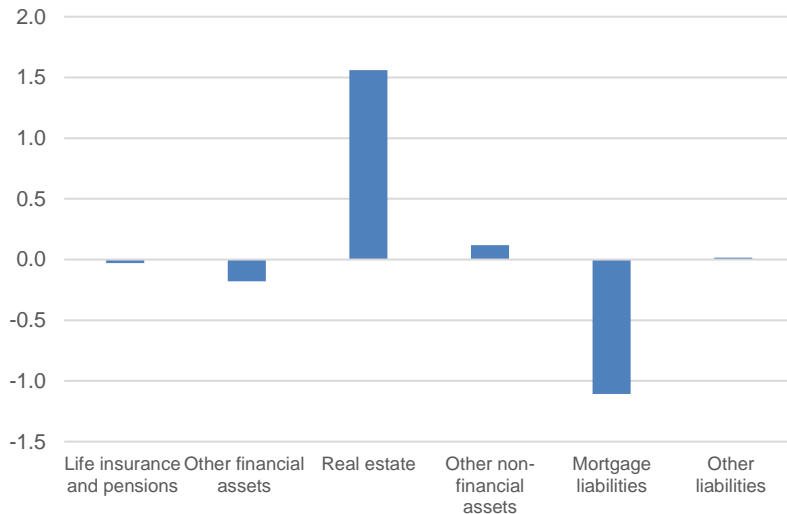
Net worth improved most for younger households during pandemic

Change in net worth by age group (fourth quarter of 2019 = 100)
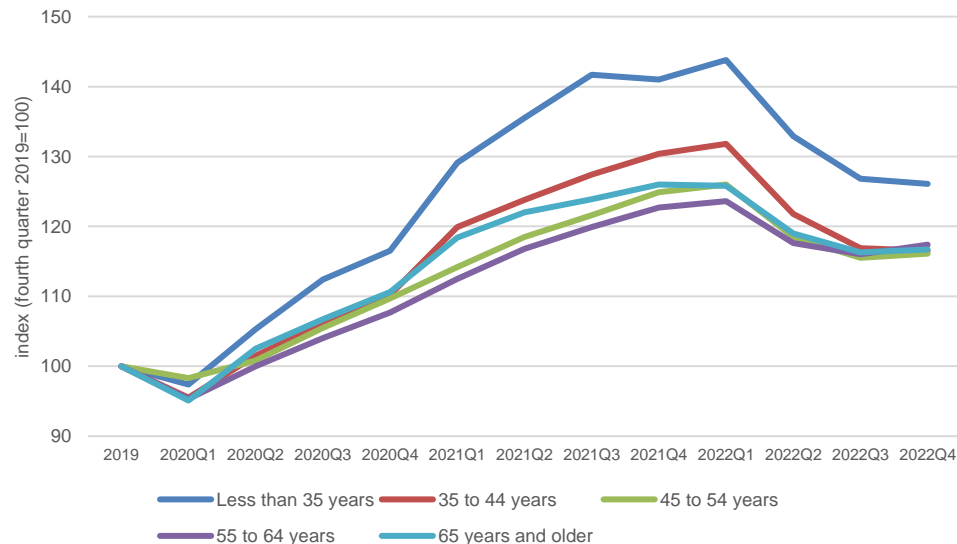
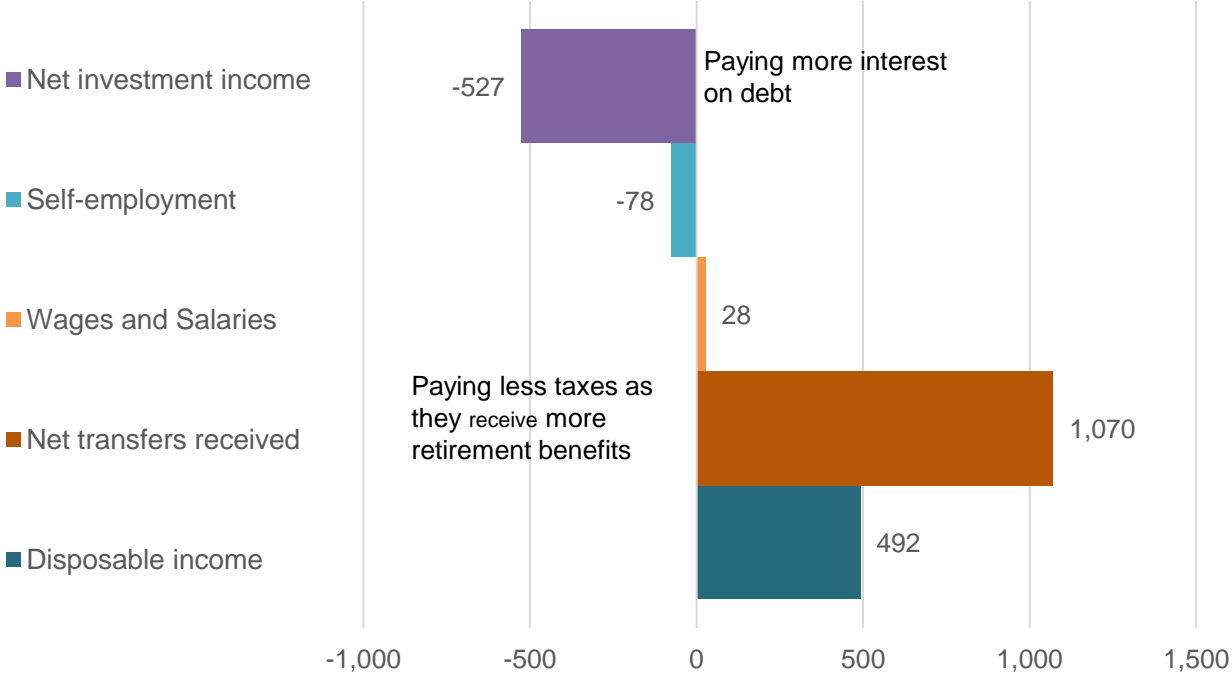**Contribution to change in net worth for households less than 35 years, 2021 relative to 2020**

- Younger households saw most improvement in their net worth over the pandemic
- This was driven by new acquisition and increased valuation of real estate assets

Retirement benefits drive up income for lowest quintile in Q1 2023

Change in average disposable income, lowest income quintile, first quarter of 2023 relative to first quarter of 2022

- Net investment income
- Self-employment
- Wages and Salaries
- Net transfers received
- Disposable income

-527   Paying more interest on debt

-78

28

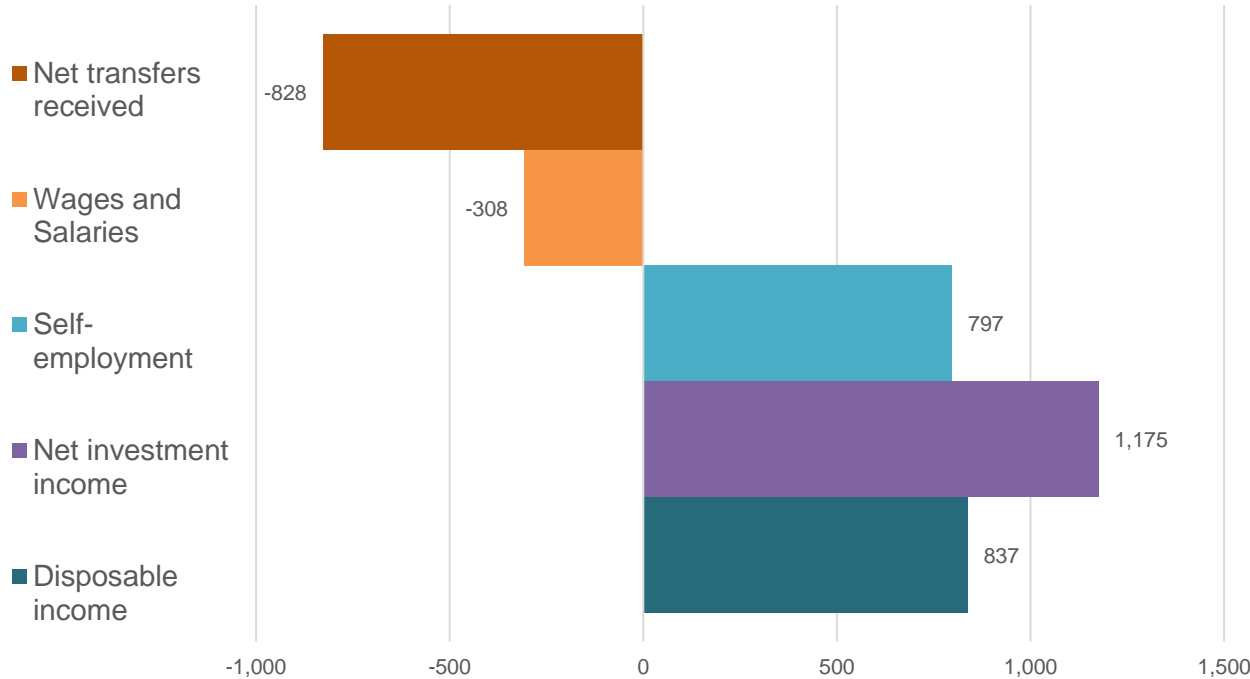Paying less taxes as they receive more retirement benefits

1,070

492

- • Lowest income earners paying less in income taxes as more transition to retirement
  - Net transfers received +48.5%
    - Taxes paid -28.7%
    - Higher government retirement benefits

- • Debt charges up +67.0% due to higher interest payments on credit cards and mortgages

Top income earners gain from high investment earnings and self-employment

Change in average disposable income, highest income quintile, first quarter of 2023 relative to first quarter of 2022

- **Net transfers received**
- **Wages and Salaries**
- **Self-employment**
- **Net investment income**
- **Disposable income**

Bar chart values:
- Net transfers received: -828
- Wages and Salaries: -308
- Self-employment: 797
- Net investment income: 1,175
- Disposable income: 837

Axis: -1,000 | -500 | 0 | 500 | 1,000 | 1,500

- Highest income households increased income at a faster than average pace (+1.9% vs. -0.2% for all households)

- Higher net investment (+13.2%), as well as self-employment (+13.0%)

- Lower transfers (-2.7%), mainly from less E.I.

- Higher taxes paid (+2.8%)

Net saving for middle-income households affected most by cost-of-living increases

Average household net saving by income quintile
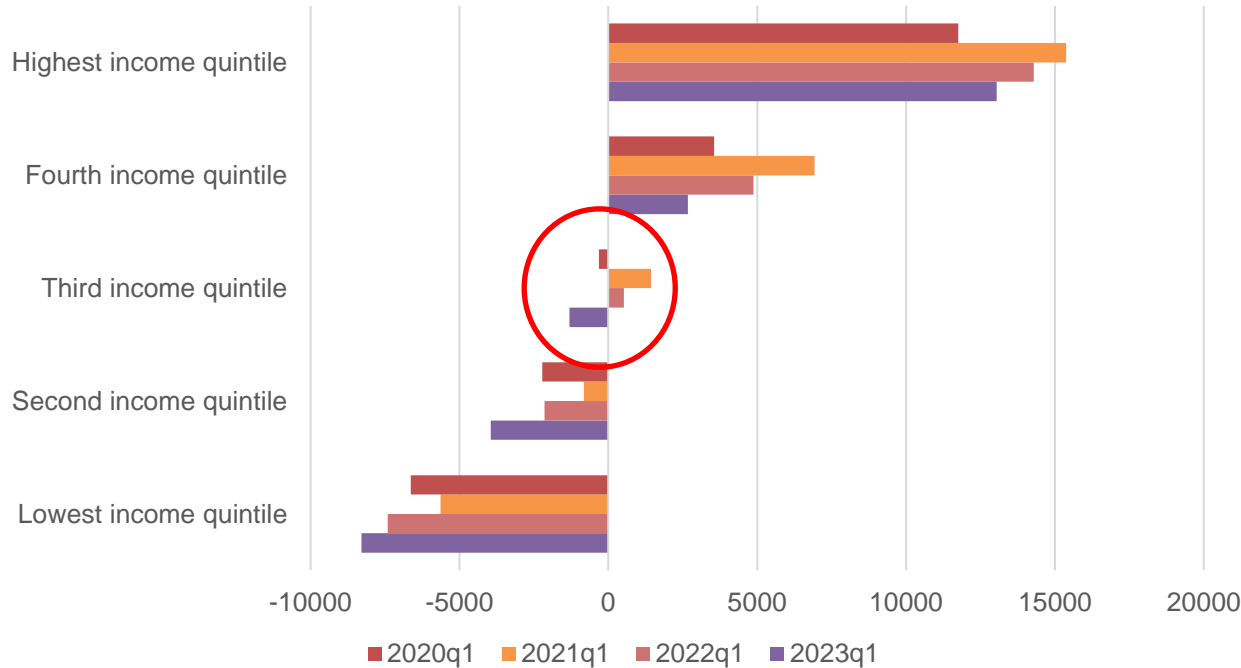
- Household spending stronger than income (esp. food & accommodation)

- Net saving declined for each quintile relative to a year earlier

- Middle income switches back to net dis-saving

- Lower income households' net saving falls below levels recorded at beginning of pandemic

Least wealthy decrease net worth at more than triple the rate of wealthiest

Change in average net worth, lowest two wealth quintiles, first quarter 2023 relative to first quarter 2022
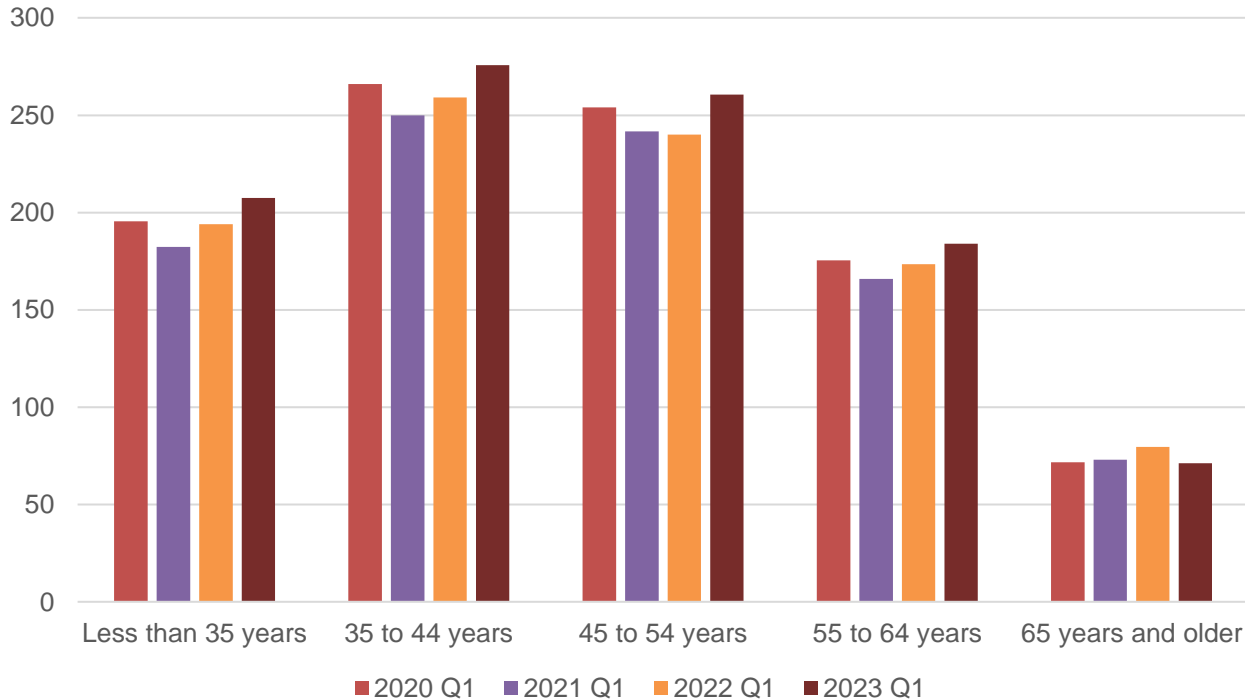

- Net worth declined most for least wealthy (-13.8%)

- Increased mortgage debt by +23.8% as they bought homes

- Despite home purchases, real estate holdings increased only +6.2%

- Recent immigration driving trends

Younger age groups at higher financial risk as debt-to-income ratios reach record highs

Debt-to-income ratio by age group

- Debt-to-income ratio for
  - <35 years (+13.4 p.p.)
  - 35-44 years (+16.6)
  - 45-54 years (+20.6)
  - 55-64 years (+10.6))
  - 65+ years (-8.5)

- Core working-age groups
  - Employment income gains more than offset by higher debt charges and lower transfers combined

- Each age group above pre-pandemic rate, except for 65+ years (retirements)

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THANK YOU.