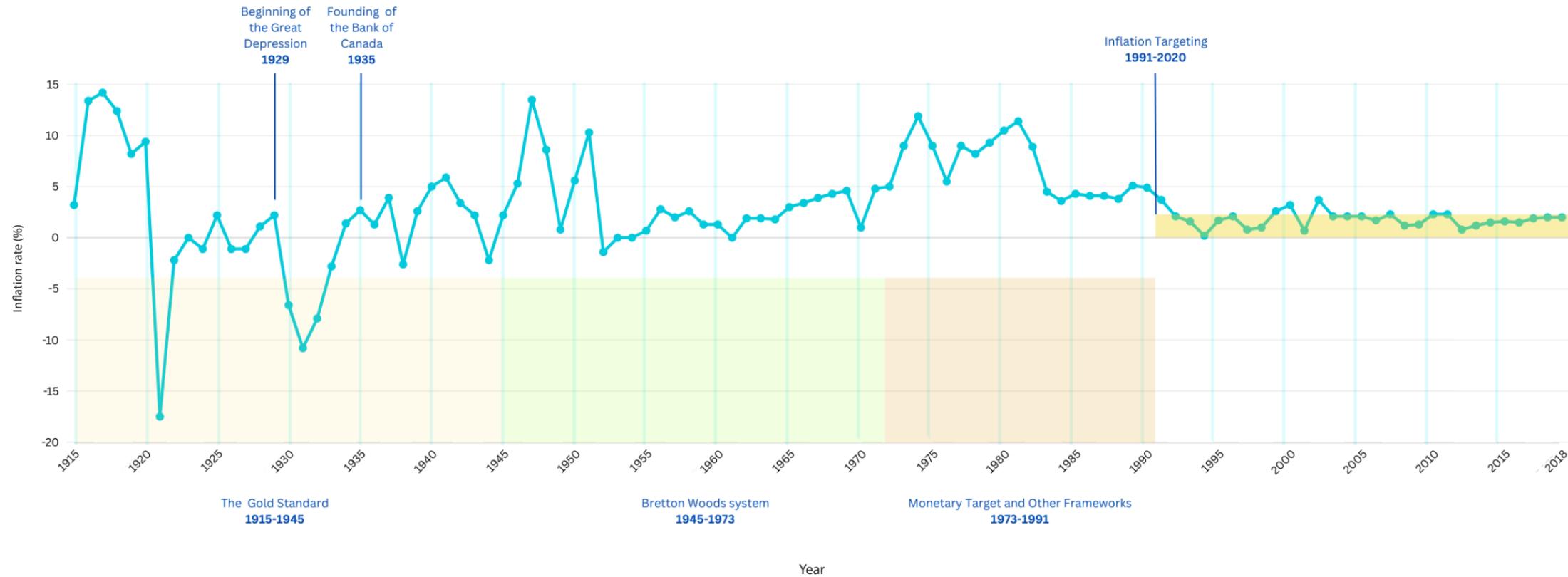


Lesson 4.2 - Decoding Data



For recessions, look for significant dips (troughs) in the data, with clear ones in 1929-1933 (during the Great Depression) and 1974-1975.

Others include: 1937-1938, 1947-1948, 1951, 1953-1954, 1957-1958, 1960-1961, 1981-1982, 1990-1992, 2008-2009.

The target for inflation is 2% with a target range of 1% to 3%.

Sources: Statistics Canada and Bank of Canada calculations



EXPLAINER

Inflation is the change of the value of money over time, meaning your purchasing power generally gets smaller as time goes by. Nearly everything costs more money now than it used to years ago.

The Bank of Canada tries to keep inflation rates stable with a moderate growth. It's a bit like the fable Goldilocks— inflation that is too high or too low can heat or cool the economy too quickly.

Until the 1990s, when the Bank began targeting the inflation rate, there were different approaches to controlling inflation in Canada. Historically, the value of the Canadian dollar was pegged either to the amount of gold the Bank had (the gold standard) or to the value of the US dollar (the Bretton-Woods system). After some years of looking for an anchor for its currency, Canada was an early adopter of targeting an inflation rate of 2%. The tool the Bank uses is the policy interest rate, which is also known as the target for the overnight rate. This is the interest rate major banks charge for overnight loans to one another.



ANALYSIS

5 What happens when incomes rise slower than inflation? How might that affect people?

6 How would you sum up the graph in one sentence?



FORECASTING

7 How might unpredictable inflation rates have impacted peoples' and business' financial decisions in the past?

8 At the start of the COVID-19 pandemic in 2020, the Bank of Canada lowered its policy rate to 0.25%, or as low as it can go. As economies around the world reopened and demand increased, inflation climbed more quickly than expected. The Bank responded by raising interest rates and inflation took a while to return to near the target range. How would you compare the post COVID-19 high inflation to rates in the ten prior years? What would you say to someone who compares periods of high inflation of the past to the inflation rates since the economy opened up after the pandemic lockdown?



HUMAN CONNECTION

9 Consider how two different people can see inflation differently: Catherine was born in 1950 and Troy was born in 1980. Both have similar incomes, went to university and bought their homes in their mid-30s. Given that inflation is connected with interest rates for borrowing and saving, how might inflation have affected them differently?





EXPLAINER

The most effective way to measure inflation is to use the Consumer Price Index. This index is made up of a virtual shopping basket of hundreds of goods and services that Canadians purchase. Statistics Canada collects prices of frequently bought items (such as milk and toilet paper) and major purchases (such as cars and dishwashers). The weight of each basket reflects the average consumer's spending.

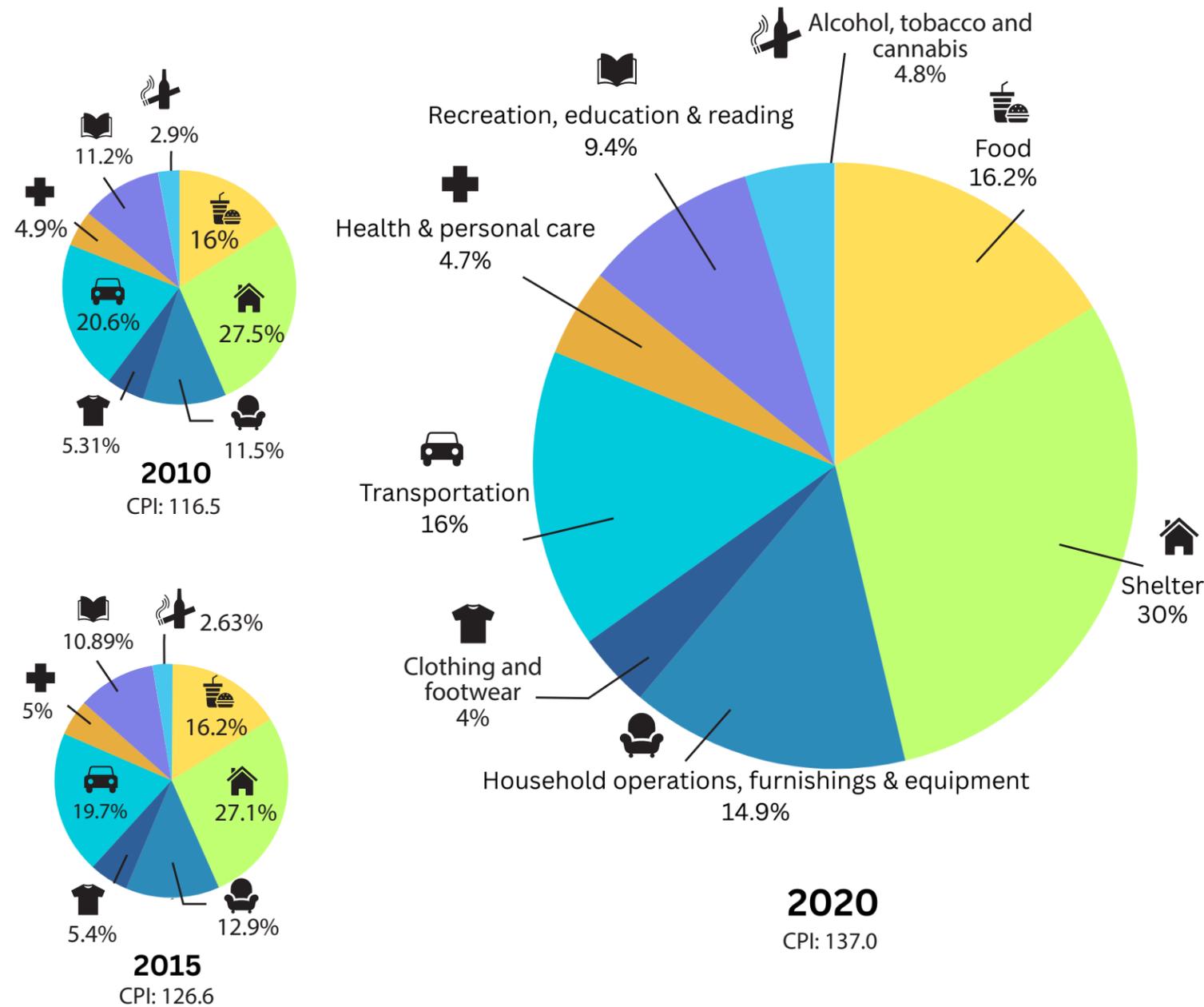
The full dollar amount of these purchases, both in each category and as a total, is converted to an index that can then be compared with indexes from prior years. The base period for this data is 2002, when CPI equals 100. Monthly CPI data are compared with the same month in the previous year, and annual data are compared among overall years.

The Bank of Canada filters out items in the basket that have extreme price fluctuations by removing the top 20% and bottom 20% of price variations. This version of CPI is called CPI-trim. The Bank also analyzes individual goods and services to see how they affect inflation.



ANALYSIS

3 Thinking like a statistician, can you think of some challenges in collecting data and using the CPI to accurately measure inflation?



For 2010: Inflation rate = $\frac{(116.5 - 100)}{100} \times 100 = +16.5\%$

For 2015: Inflation rate = $\frac{(126.6 - 116.5)}{115.1} \times 100 = +10.1\%$

For 2020: Inflation rate = $\frac{(137.0 - 126.6)}{126.6} \times 100 = +8.2\%$

2002-2010: interest rate increased 16.5%

2010-2015: interest rate increased 10.1%

2015-2020: interest rate increased 8.2%

4 CPI-trim helps the Bank of Canada look at long-term inflation trends. What kinds of goods and services do you think would not appear in CPI-trim?



FORECASTING

5 Gathering CPI data from the territories can be difficult. Why do you think that is?

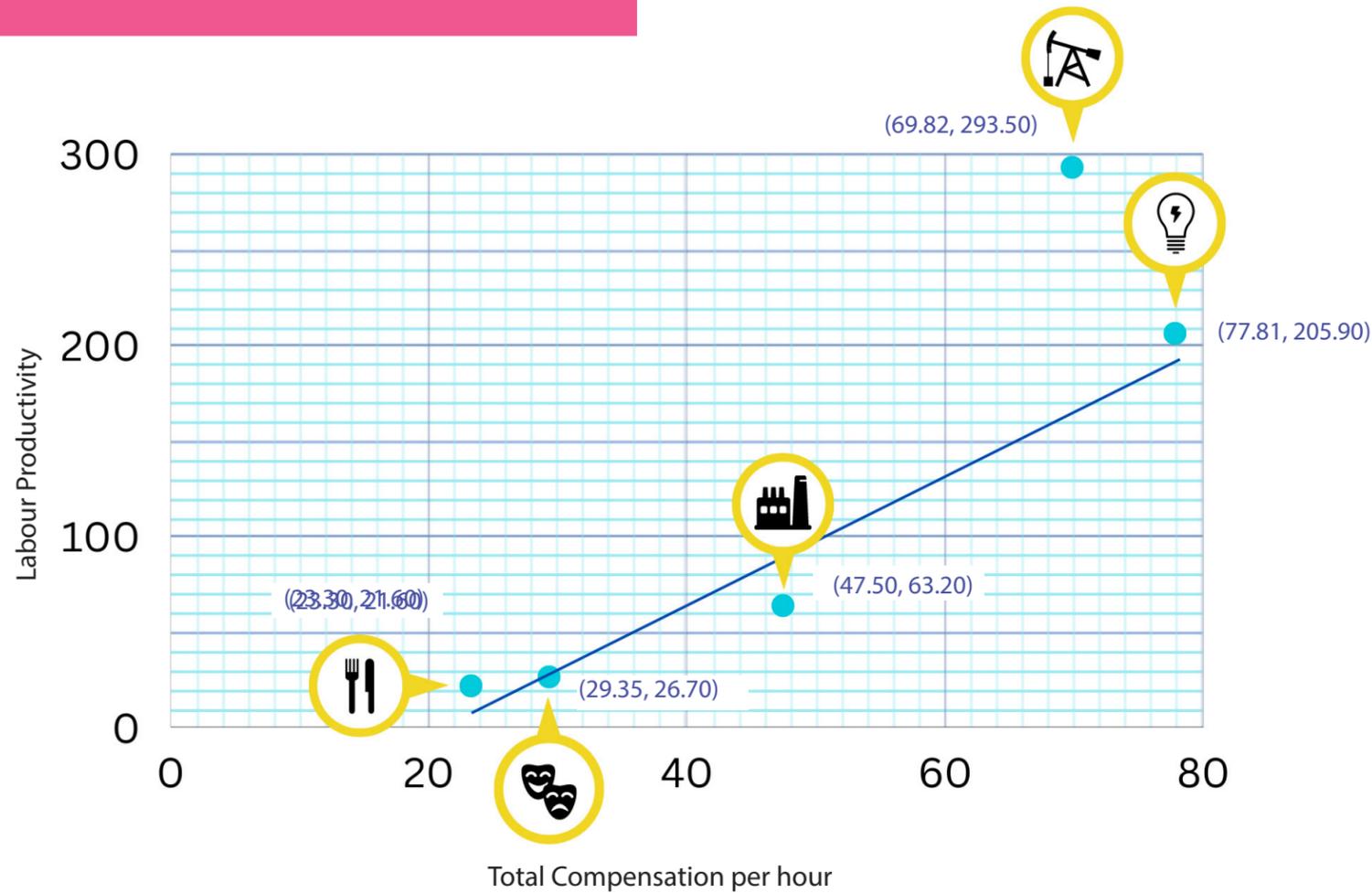
6 The CPI does a good job of calculating inflation, but it's not perfect. This is due to factors like substitution, new products, technological advances and the rise of online shopping. How could you explain the effect each of these factors has on consumer spending?



HUMAN CONNECTION

7 How would you compare your household's spending weights to those in the CPI? Do you think your personal spending inflation rate is lower, higher or the same as the CPI?





Source: Adapted from Statistics Canada. 2024. Table 36-10-0480-01 Labour productivity and related measures by business sector industry and by non-commercial activity consistent with the industry accounts.

EXPLAINER

Labour productivity is measured by how much an industry produces over a certain amount of time. It considers both compensation (wages) for the worker and output, or the value of what that worker produces per hour of work.

Improvements in labour productivity can lead to higher wages and a better standard of living. But not every industry provides a high output. The accommodation and food services industries have lower output with smaller profit margins, and therefore wages are lower. Of course, this also means these sectors can offer many jobs to people with less-specialized skills and fill a demand in society for these goods and services.

One benefit of higher productivity can be higher wages. A highly specialized workforce with specialized equipment may cost more but can also boost output. Two sectors stand out for this: utilities, and mining, oil and gas extraction.

ANALYSIS

4 What kinds of industries do you think have the largest swings or unpredictability in wages or output?

5 Considering the data, why do you think not every job pays the same?



FORECASTING

6 A factor not included in the chart is the level of education required for different jobs. How would you describe the relationship between education, productivity and compensation (wages)?

7 Now that you've thought about the work above, what job advice would you offer a new high school graduate about careers?

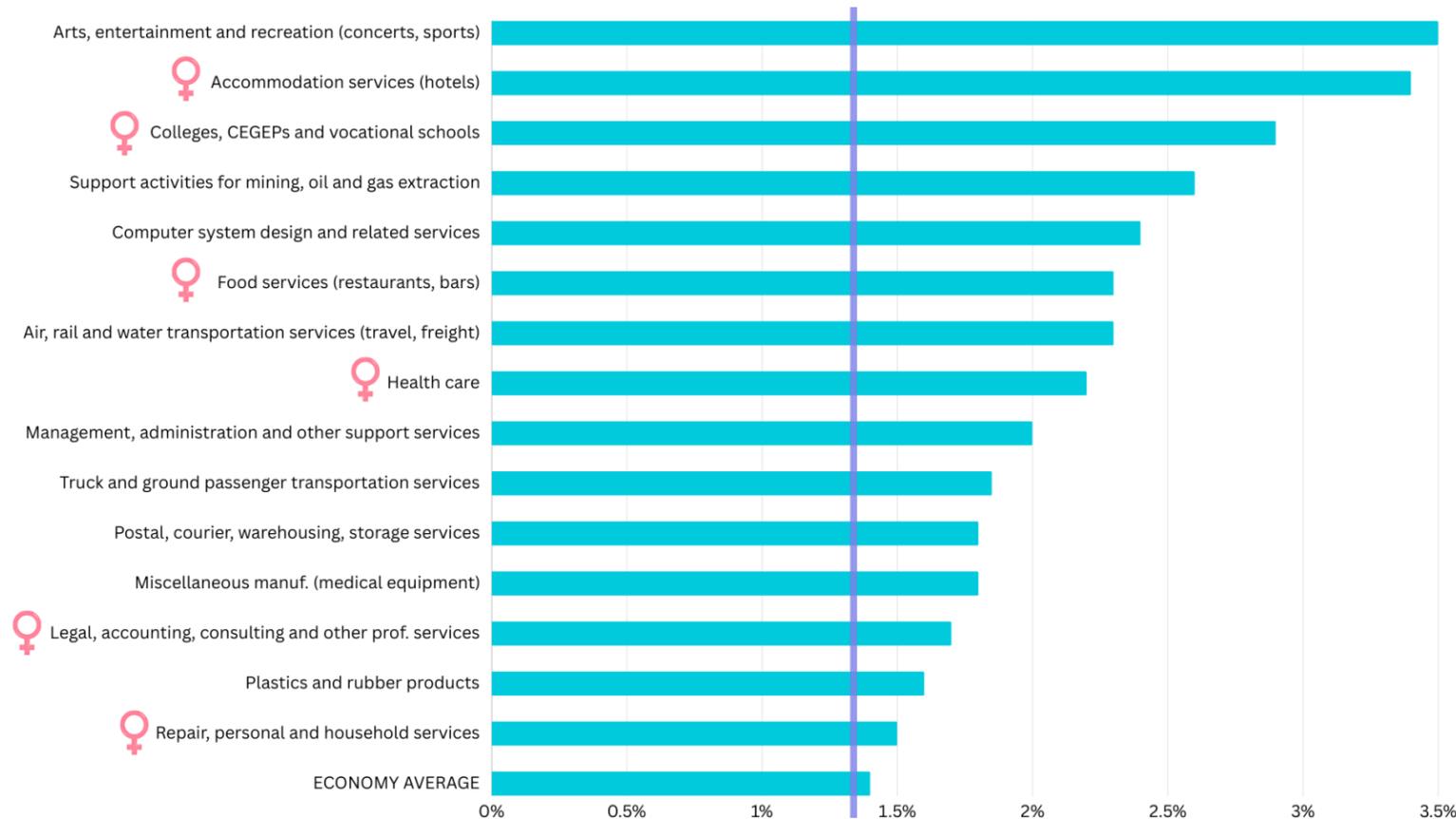


HUMAN CONNECTION

8 Debate the merits of the following argument: All work is valuable; it just depends on who is measuring it.



Industries projected to have the strongest employment growth, projection 2022-2031



 Industries with a majority female workers (more than 50% in 2021)

Source: Employment and Social Development Canada. 2022. Canadian Occupational Projection System (COPS) Job Openings (2022-2031)



EXPLAINER

Economic and Social Development Canada is a federal government department that measures Canadian jobs and employment growth. The industries it tracks in its Canadian Occupational Projection System are expected to have strong output, a lot of labour intensity and human-centric jobs.

The industries listed in the chart benefit from an increased demand from both consumers and businesses. Many are connected to other industries that lost or paused significant numbers of jobs during the COVID-19 pandemic. A lot of service jobs are hard to do remotely and were affected by regional health measures. This made the recovery in the late stage of the pandemic uneven. Tourism and consumer disposable income are essential to many of these industries. Supply chains were also significantly impacted.

Predicting the future of work requires looking at a lot of data, such as global demand for goods and services, rising technology and long-term government policies that support or discourage growth in different sectors.



ANALYSIS

4 Categorize the industries in the chart as belonging to either the services sector or the primary (resources) and secondary (manufacturing) sectors. How many are in each sector? What is the ratio? What does that tell you?

5 How do you explain what types of industries will see the strongest growth following the COVID-19 pandemic? Why do you think that might be?



FORECASTING

6 Many factors help explain why each industry might see a large growth. Make an argument for how each of the following elements could affect some of the industries listed below.

a. increasing immigration numbers

b. e-commerce and online shopping

c. an aging population

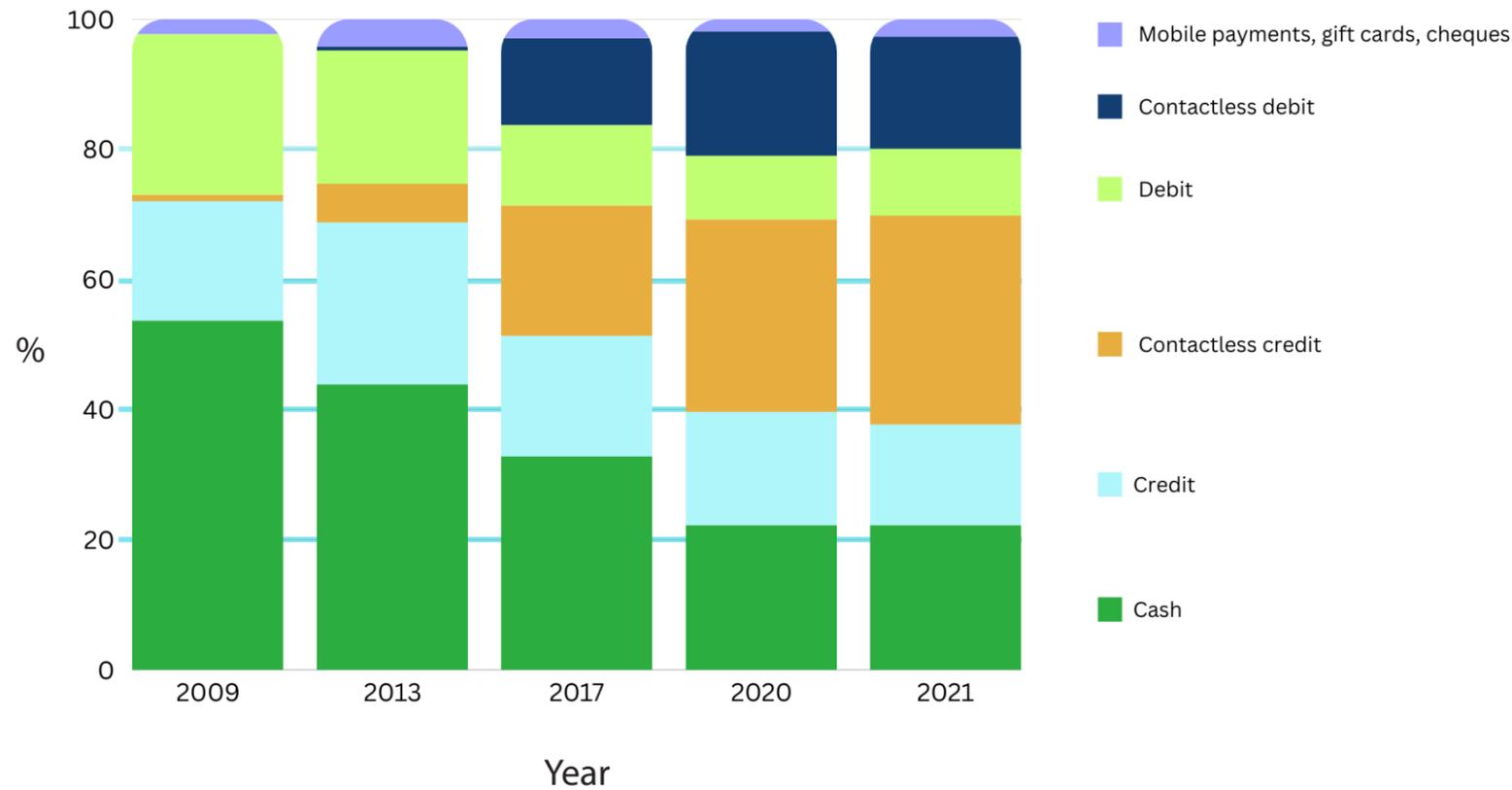


HUMAN CONNECTION

7 Decide if the following statement is true or false, using the data in the chart: "The COVID-19 pandemic has hit female workers harder than male workers."



Payment methods over time



Source: Henry, C., M. Shimoda and J. Zhu. 2022. "2021 Methods-of-Payment Survey Report". Bank of Canada Staff Discussion Paper 2022-23.



EXPLAINER

The Bank of Canada is the sole authority for issuing bank notes, and it supplies banks and financial institutions with cash for consumers. It also measures payment methods, including in-person cash transactions, using a survey for Canadians to track their daily purchases in a diary.

Analyzing cash demand in Canada allows the Bank to make business decisions about how many bank notes to produce and distribute. The analysis shows most Canadians do not see themselves going cashless anytime soon. However, they increasingly use card payments, including contactless (such as mobile or tap-and-go) payments, for most of their transactions. Analysis also helps the Bank track:

- current demand for cash to predict future demand for cash
- access to automated teller machines in remote communities
- the effects of new technology on payment methods
- the life cycle of polymer bank notes

The Bank is committed to ensuring that cash remains available for those who want to use it.



ANALYSIS

4 Think about your own methods of payments for everyday transactions, or ask a few of your peers and estimate an average per category. Write down the percentages and compare them with the data provided.

5 Credit card use is on the rise in Canada. What might be some reasons for this?

6 Given the data and what you already know, do you think Canada will become a cashless society? Explain why or why not.



FORECASTING

7 How would you describe the relationship between cash use and technology? Explain your reasoning.



HUMAN CONNECTION

8 Cash is particularly important for unbanked people in Canada. Why do you think some people do not have bank accounts or credit cards? What does this mean for the role cash plays in the economy?

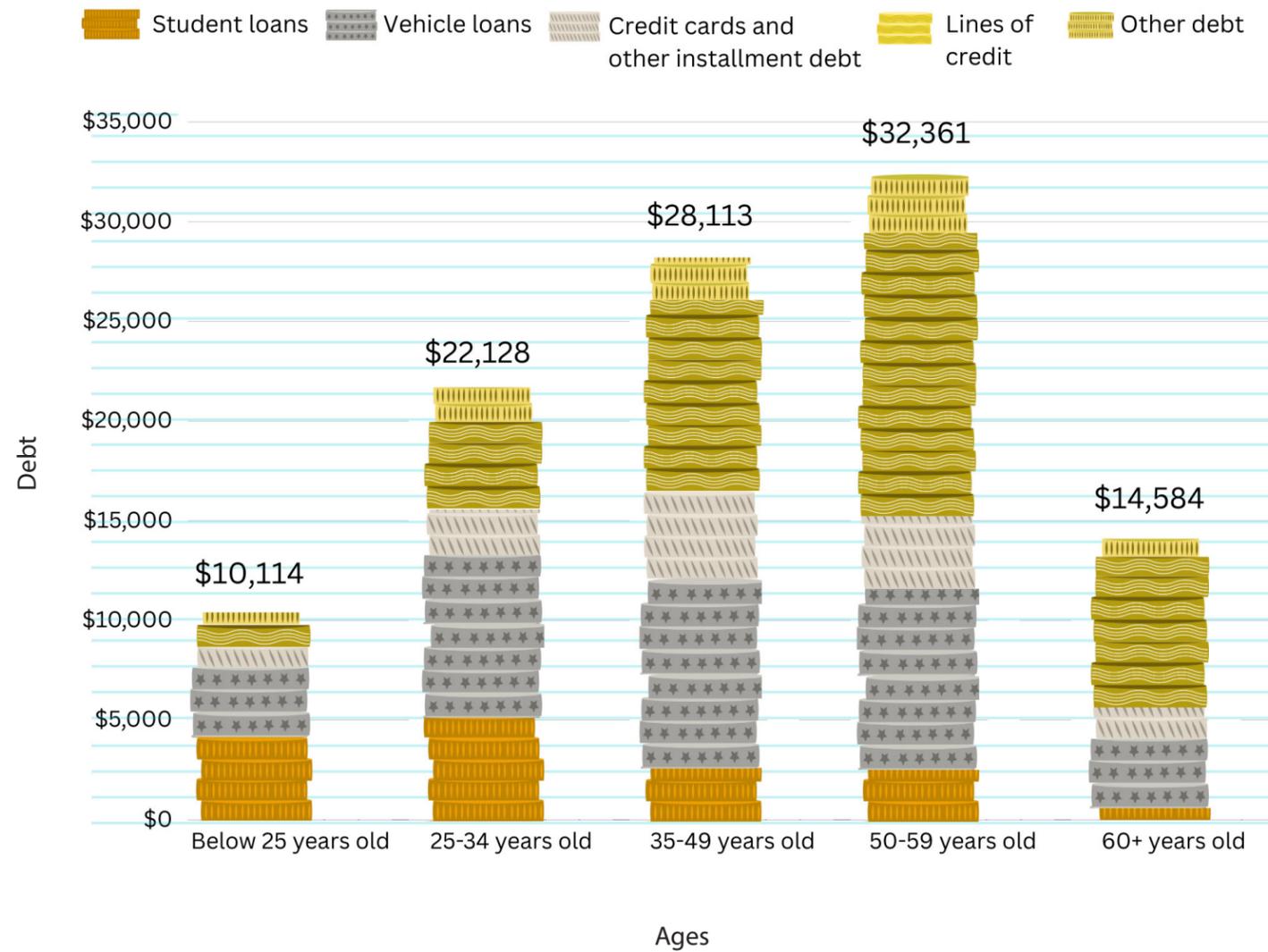


 **EXPLAINER**

Over a person's lifetime, it's common to borrow money to help cover expenses that would be difficult to pay right out of pocket. These include paying for a home, vehicle or post-secondary education. In the middle years of life, people tend to maximize their earning potential and take on debt based on their comfort level for being able to pay it back. Most importantly, the types of debt and the interest rates attached to the debt matter in paying it off.

The data in this chart do not include mortgage debt, which would increase the amounts even more. In 2023, around two-thirds of Canadians owned their homes, with many in their 30s and 40s owing around half a million dollars for them on top of other debt.

Canadians have a significant amount of household debt, more than most comparable countries. As people live longer today than in past decades, older adults still hold high amounts of various kinds of debt. And increased interest rates make debt harder to pay off because more of the payment goes to paying the interest on that debt.



Source: adapted from Statistics Canada. 2019. Survey of Financial Security

 **ANALYSIS**

4 What are some possible risks for the Canadian economy if older Canadians hold more debt?

5 Make a list of types of debt and rank them according to which you think would have the lowest to highest interest rates.

7 How might higher interest rates affect the amount and type of debt held by each age category?



HUMAN CONNECTION

8 What significant life events could affect the amounts and types of debt that occur in each of the age groups?



FORECASTING

6 Mortgage debt is not included in the chart above. Why do you think that might be?

