CRA DATA ANALYSIS

Canada Revenue Agency · Agence du revenu du Canada

SAIT

DESCRIPTIVE STATISTICS AND VISUALIZATION

EXECUTIVE SUMMARY

Problem (WHY): Data needs to be measured to obtain meaningful & actionable insights. It helps researchers summarize the data and find patterns to design new policies & procedures.

Solution (WHERE): This project is based on Descriptive Statistics to provide absolute numbers statistics based on mean, percentage, frequency, range. However, they do not explain the rationale or reasoning behind those numbers.

Methodology (HOW): Introduction of Strategic Tool to evaluate, organize and track macro economic factors that can impact the business.

PRESENTATION OUTLINE

- PEST Analysis for CRA (Canada Revenue Agency)

- Number of TFSA (Tax Free Savings Account) holders by province

- Absolute & % increase in No. of TFSA holders from 2014 to 2017

- Provinces having the max & min market values over the years 2014-17

- Provinces having the max & min value of withdrawals over the years 2014-17

- Provinces having the max & min value of contributions over the years 2014-17

- Age groups having max & min No. of TFSA Holders over the years 2014-17

- Income groups having max & min No. of TFSA Holders over the years 2014-17

- Total income of males & females over years 2015-17

- Distribution of income among males and females

- No. of taxpayers by source of income over years 2015-17

- No. of taxpayers by age group over years 2015-17

PEST ANALYSIS

A PEST analysis is a strategic business tool used by organisations to discover, evaluate, organize, and track macro-economic factors which can impact on their business now and in the future.

Political

The tax income to CRA can increase or decrease depending on the prevalent political scenario. If the political environment favours low taxes, CRA's income will reduce and vice versa.

Economic

Depending on whether the economic conditions in the country are good, the tax collection can fluctuate. An economic downturn can lead to reduced tax income and vice versa

PEST

Social

Change in demographics can have an impact on tax collection. If more number of people are in the working age, the tax collection will be considerably higher than if more number of people are in senior age.
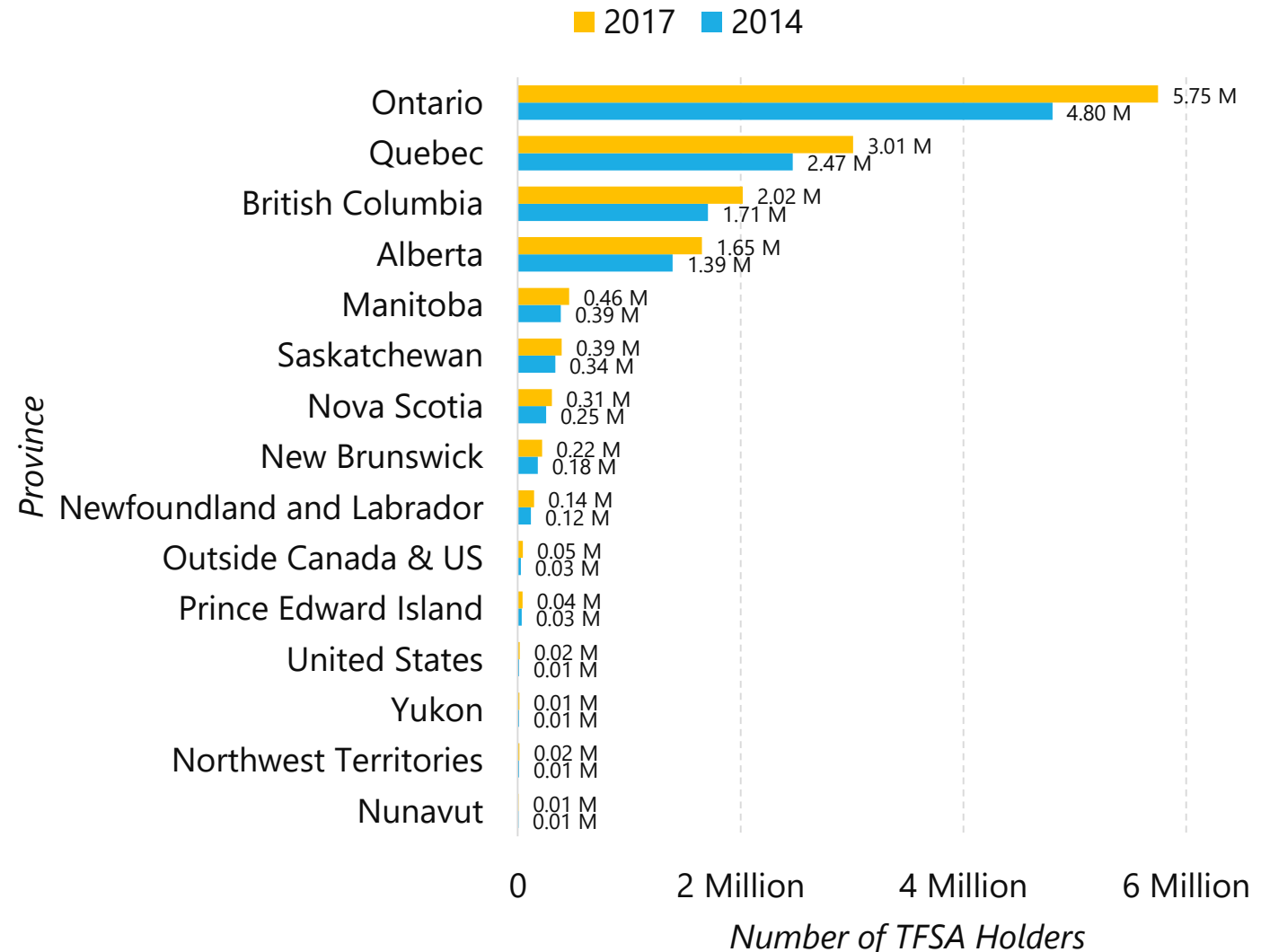
Technological

The integration of technology into the tax collection system can better help track the actual individual income and can lead to lesser number of people evading the tax system.

WHICH PROVINCE HAS HIGHEST NUMBER OF TFSA HOLDERS?

TFSA Program was introduced in 2009.

Ontario has the highest number of TFSA holders in 2014 (2016 Edition) as well as in 2017 (2019 Edition) followed by Quebec & British Columbia

Total number of TFSA (Tax Free Savings Account) holders

■ 2017   ■ 2014

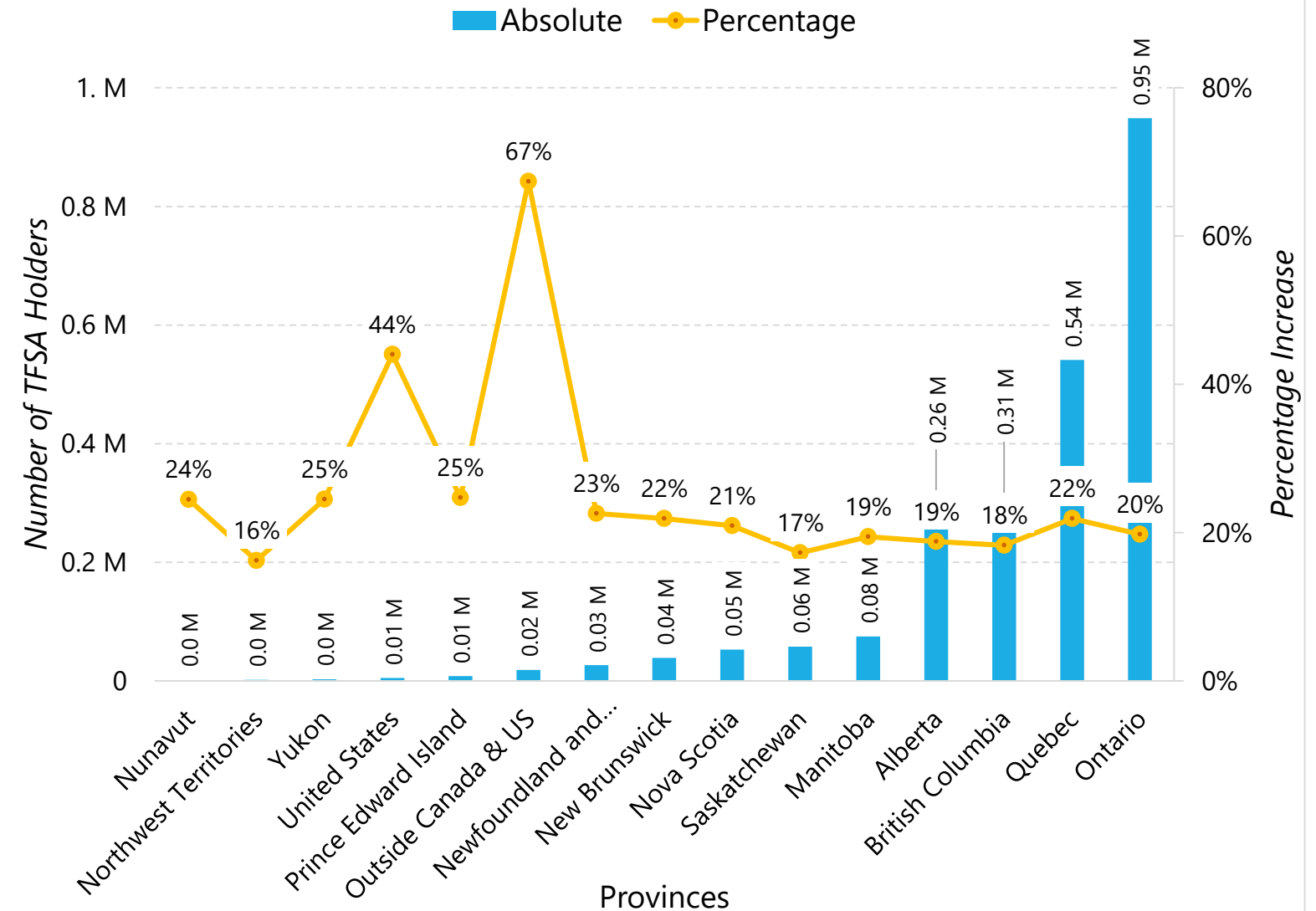| Province	2017	2014
Ontario	5.75 M	4.80 M
Quebec	3.01 M	2.47 M
British Columbia	2.02 M	1.71 M
Alberta	1.65 M	1.39 M
Manitoba	0.46 M	0.39 M
Saskatchewan	0.39 M	0.34 M
Nova Scotia	0.31 M	0.25 M
New Brunswick	0.22 M	0.18 M
Newfoundland and Labrador	0.14 M	0.12 M
Outside Canada & US	0.05 M	0.03 M
Prince Edward Island	0.04 M	0.03 M
United States	0.02 M	0.01 M
Yukon	0.01 M	0.01 M
Northwest Territories	0.02 M	0.01 M
Nunavut	0.01 M	0.01 M

Number of TFSA Holders

WHAT IS THE ABSOLUTE & % INCREASE IN NO. OF TFSA HOLDERS FROM 2014 TO 2017?

Ontario has the highest absolute increase in number of TFSA holders followed by Quebec and British Columbia.

The Canadian Territory to record the highest % increase is Yukon with 24.5% and same for Province PEI from 2014 (2016 Edition) to 2017 (2019 Edition).
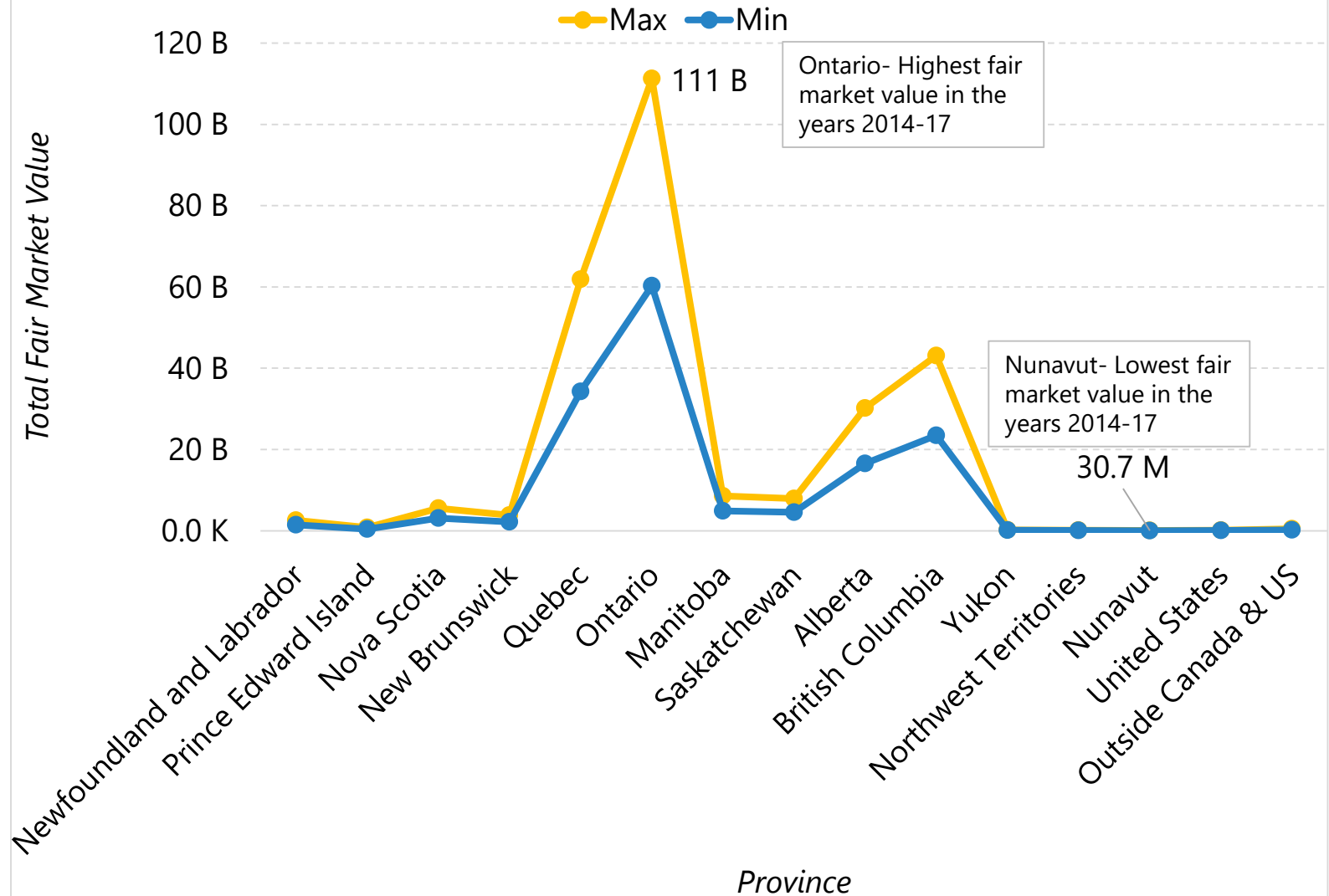
Increase in number of TFSA holders from 2014-17

- Absolute
- Percentage

Province	Absolute	Percentage
Nunavut	0.0 M	24%
Northwest Territories	0.0 M	16%
Yukon	0.0 M	25%
United States	0.01 M	44%
Prince Edward Island	0.01 M	25%
Outside Canada & US	0.02 M	67%
Newfoundland and...	0.03 M	23%
New Brunswick	0.04 M	22%
Nova Scotia	0.05 M	21%
Saskatchewan	0.06 M	17%
Manitoba	0.08 M	19%
Alberta	0.26 M	19%
British Columbia	0.31 M	18%
Quebec	0.54 M	22%
Ontario	0.95 M	20%

Number of TFSA Holders (left axis): 0 – 1. M
Percentage Increase (right axis): 0% – 80%
Provinces (x-axis)

WHICH PROVINCES HAD THE MAX & MIN FAIR MARKET VALUES OVER THE YEARS 2014-17?

Ontario had the max fair market value of 111.2 B in 2017 whereas Nunavut had the lowest of 30.7 M in 2014.

However, absolute percentage increase in TFSA Holders for Nunavut was 24% & for Ontario 20% from 2014-17
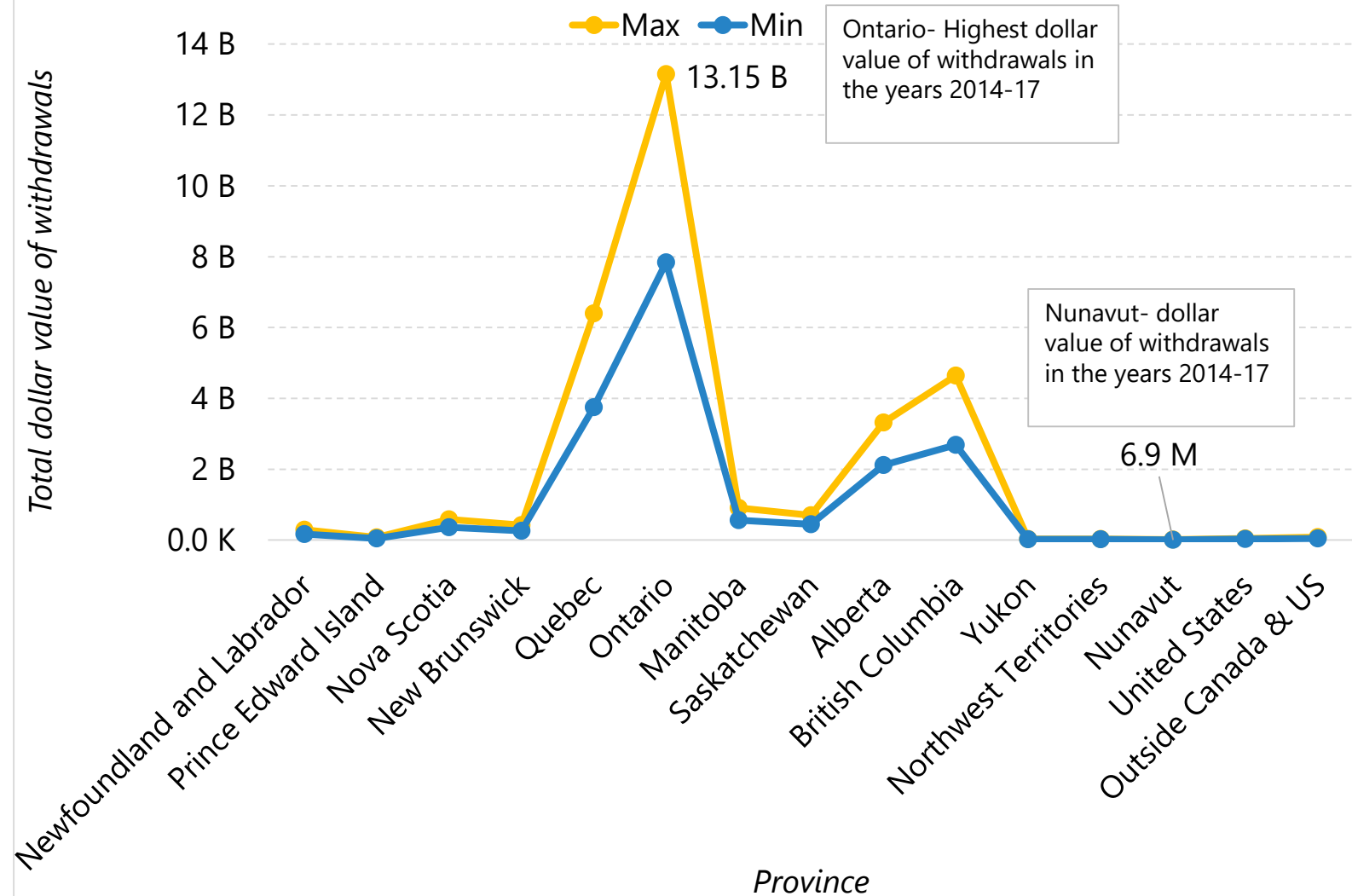
Max and Min Total Fair Market Value from 2014 – 17 (2016 Edition to 2019 Edition)

Ontario- Highest fair market value in the years 2014-17

Nunavut- Lowest fair market value in the years 2014-17

111 B

30.7 M

Total Fair Market Value

Province

WHICH PROVINCES HAD THE MAX & MIN VALUE OF WITHDRAWALS OVER THE YEARS 2014-17?

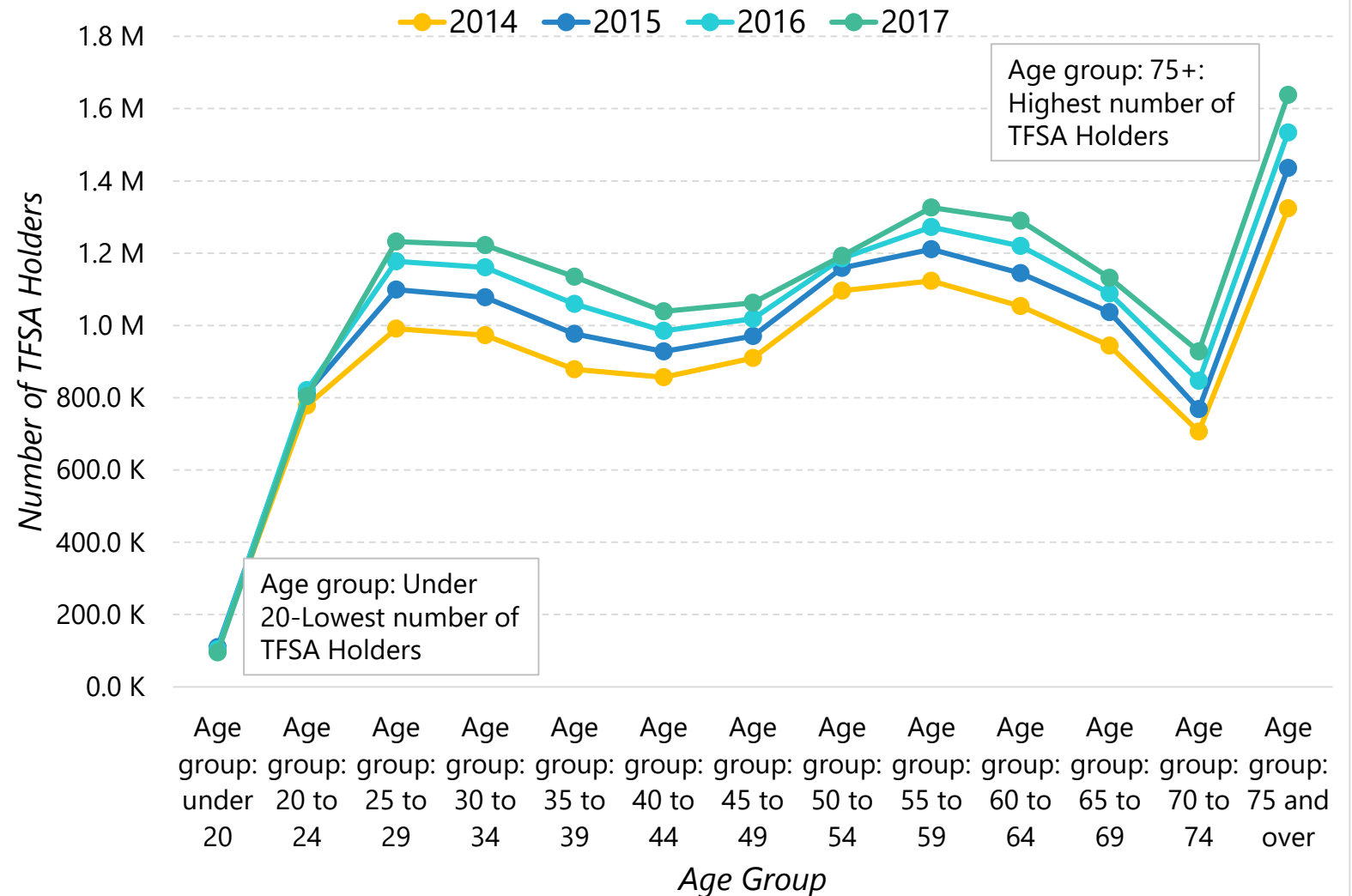Ontario had the dollar value of withdrawals of 13.15 B in 2017 whereas Nunavut had the lowest of 6.9 M in 2014

Max and Min Total dollar value of withdrawals from 2014-17 (2016 Edition to 2019 Edition)

Ontario- Highest dollar value of withdrawals in the years 2014-17

Nunavut- dollar value of withdrawals in the years 2014-17

13.15 B

6.9 M

Total dollar value of withdrawals

Province
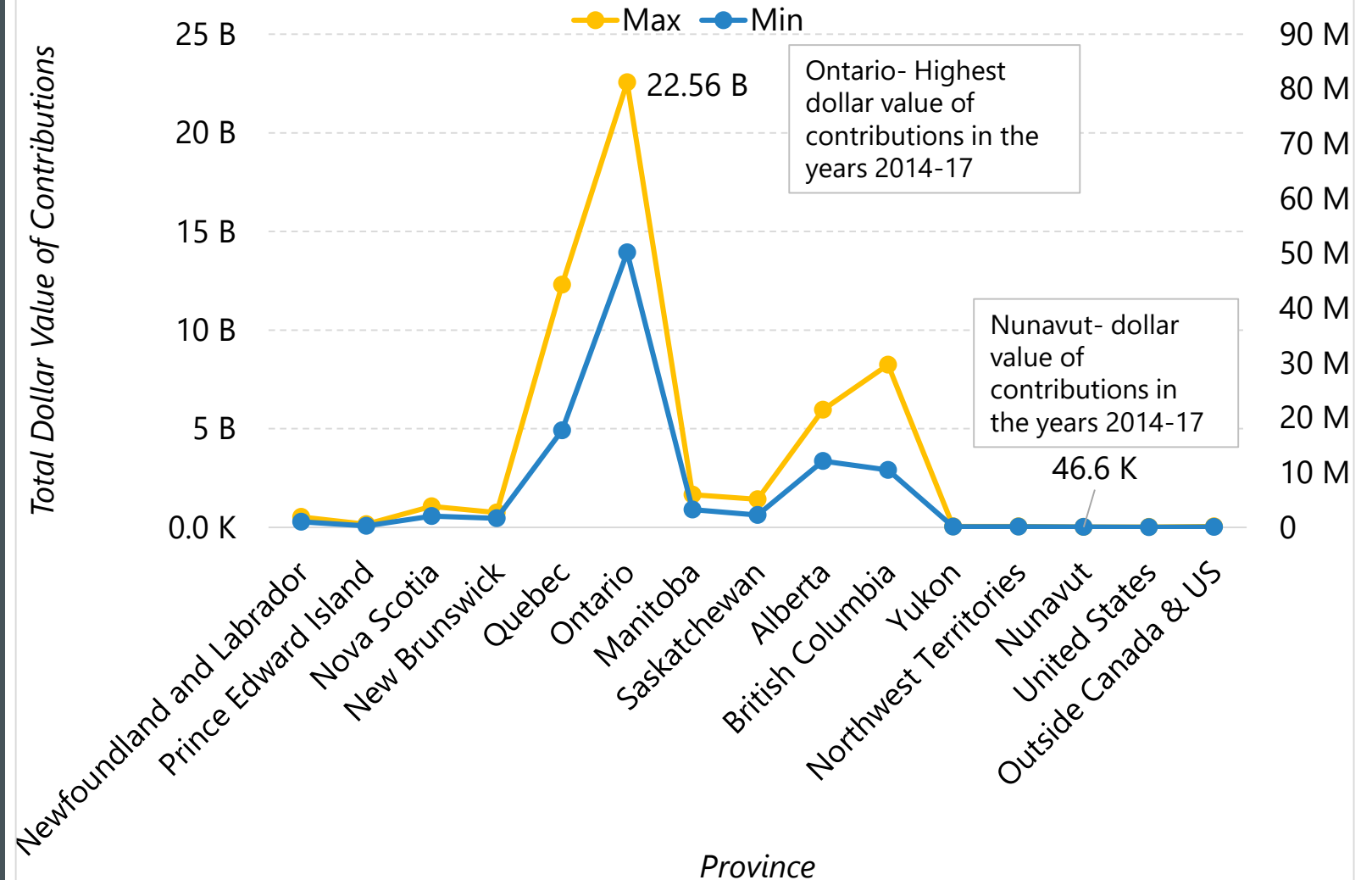
WHICH INCOME GROUP HAS MAX & MIN NO. OF TFSA HOLDERS OVER THE YEARS 2014-17?

Highest number of TFSA accounts are held by people in income group $100K - $149.9K whereas lowest number are held by those in loss or with zero income
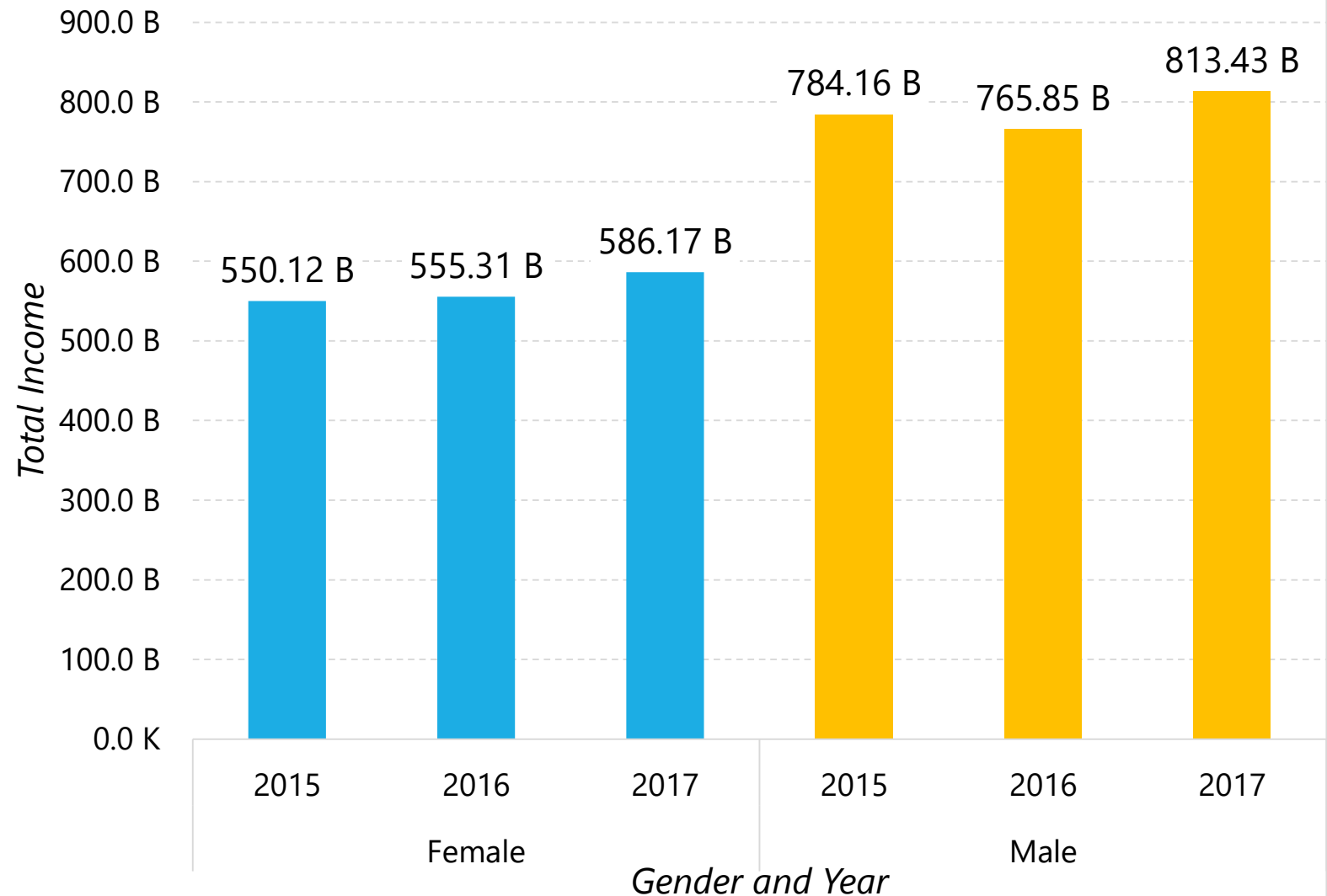
Total number of TFSA holders by income group from 2014-17 (2016 Edition to 2019 Edition)

Highest number of TFSA accounts

Lowest number of TFSA Account

Legend: 2014, 2015, 2016, 2017

Y-axis: Number of TFSA Holders
X-axis: Income Group

Income Groups: Loss & 0, $1 - $4.9K, $5K to $9.9K, $10K - $14.9K, $15K - $19.9K, $20K - $24.9K, $25K - $29.9K, $30K - $34.9K, $35K - $39.9K, $40K - $44.9K, $45K - $49.9K, $50K - $54.9K, $55K - $59.9K, $60K - $69.9K, $70K - $79.9K, $80K - $89.9K, $90K - $99.9K, $100K - $149.9K, $150K - $249.9K, $250K +
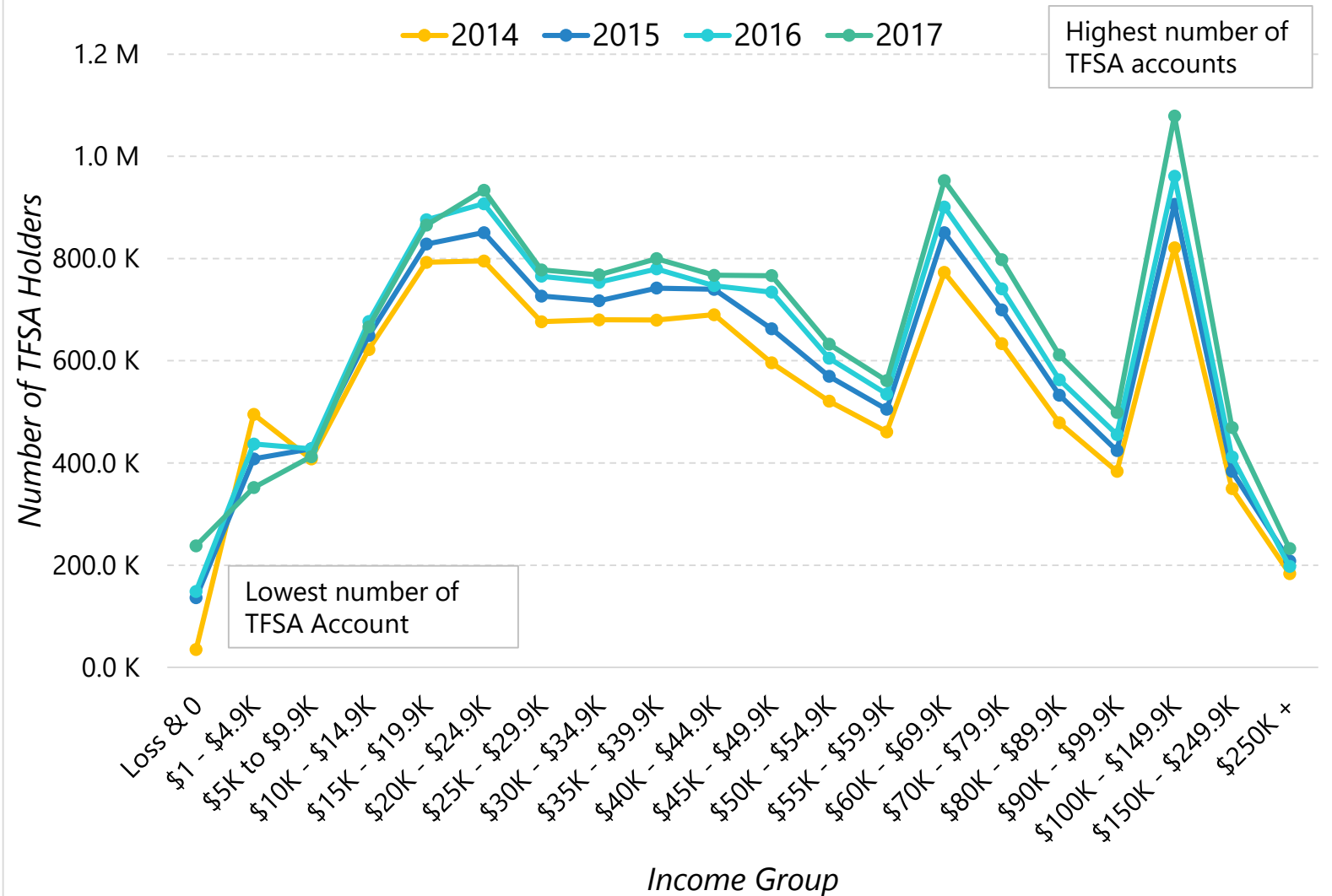
IS THERE ANY DIFFERENCE BETWEEN TOTAL INCOME OF MALES & FEMALES OVER YEARS 2015-17?

The Total Female income has been 71.6% of Total Male income on an average over the years 2015-16-17
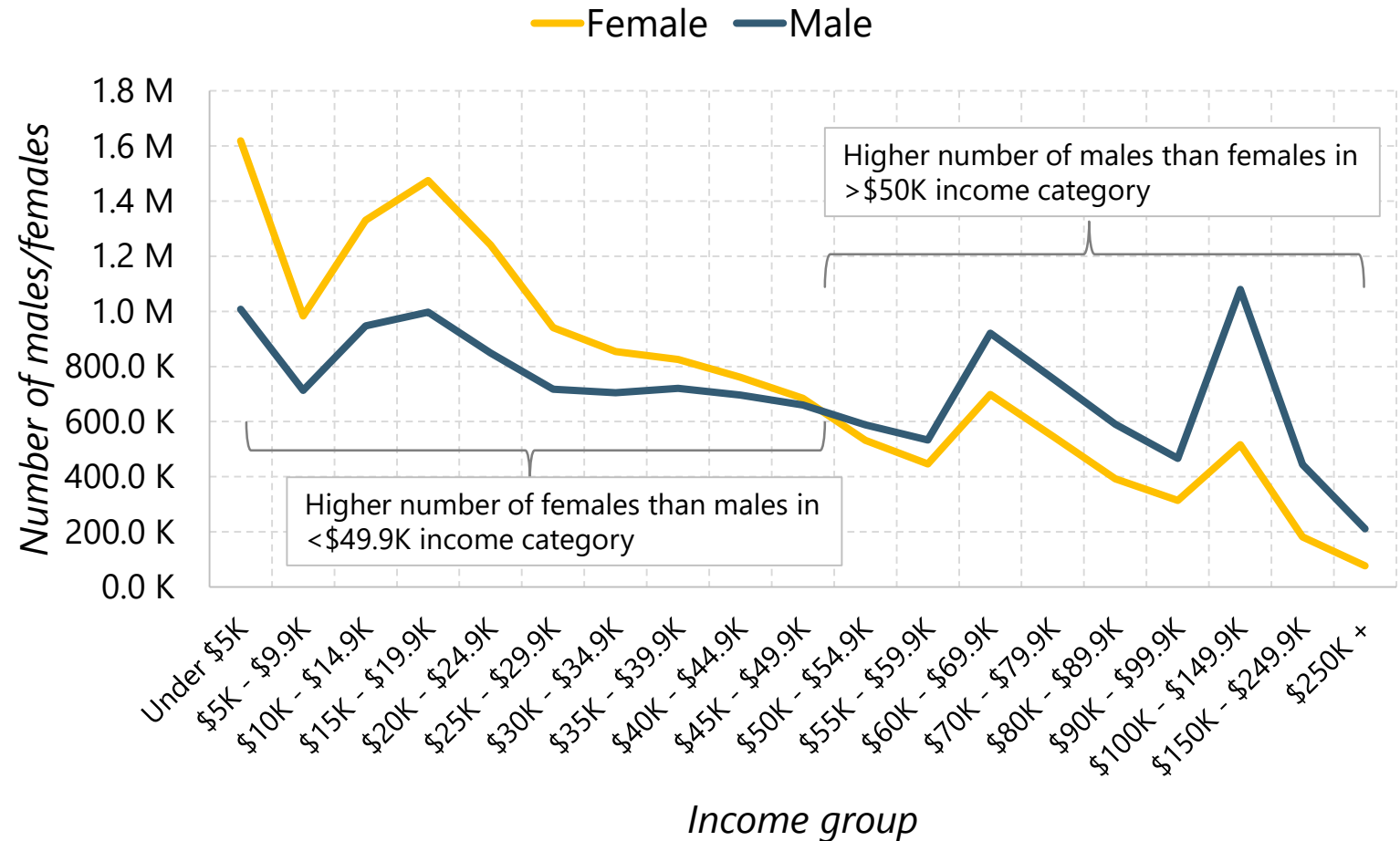
Gender-wise total income over the years 2015-17 (2017 Edition to 2019 Edition)

Total Income

Female			Male		
2015	2016	2017	2015	2016	2017
550.12 B	555.31 B	586.17 B	784.16 B	765.85 B	813.43 B

Gender and Year

IS THERE ANY SIGNIFICANT CHANGE IN NO. OF TAXPAYERS BY AGE GROUP OVER YEARS 2015-17?

The number of taxpayers by income source remains fairly constant through the year 2015-16-17 except for "Benefits" which has a significant drop of 25.7 M taxpayers from 2016 to 2017
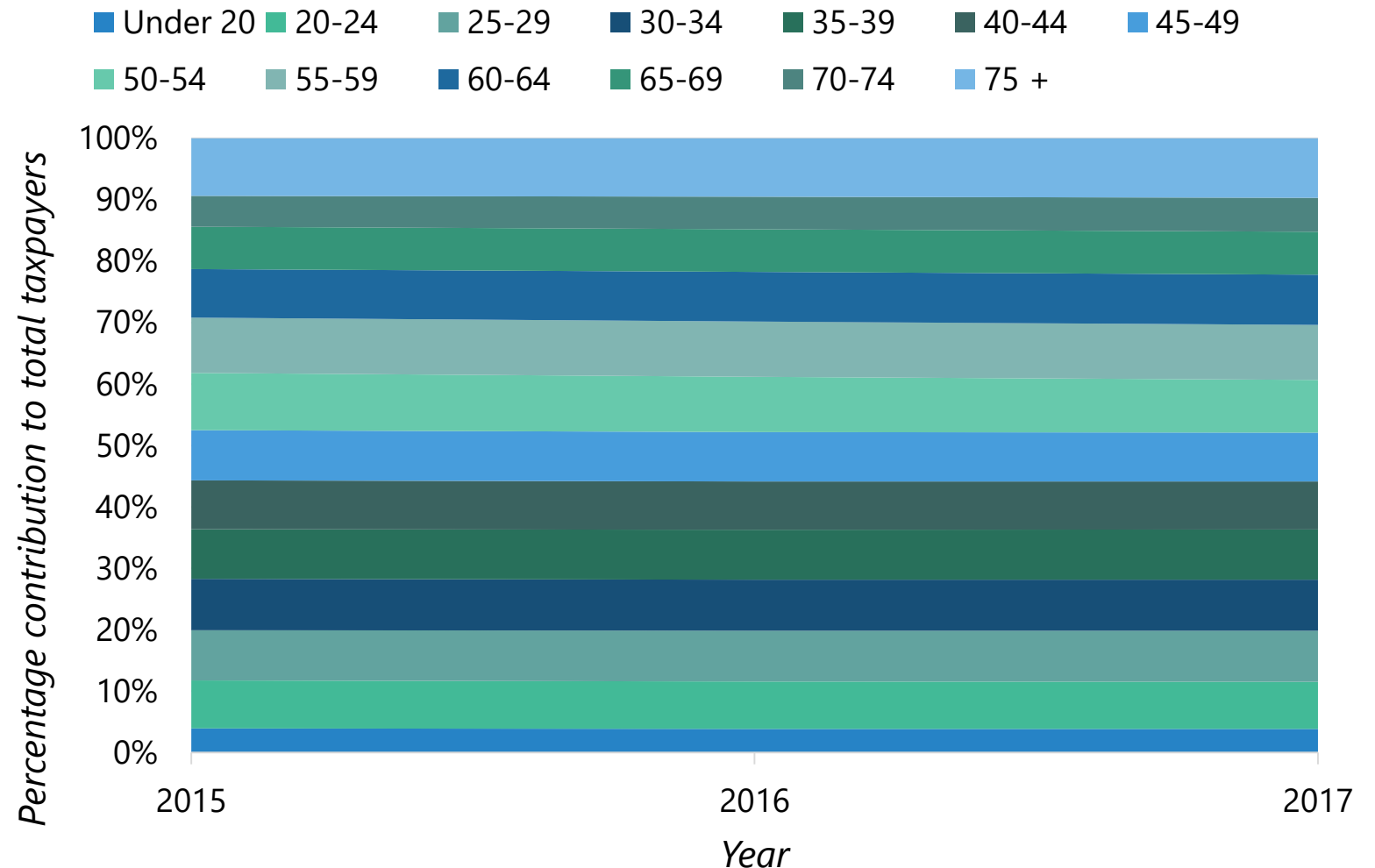
Age-wise distribution of taxpayers over the years 2015-17 (2017 Edition to 2019 Edition)

Legend: Under 20 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75 +

Percentage contribution to total taxpayers

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%

2015   2016   2017

Year

CONCLUSION

- PEST Analysis can be very effective in defining scope of the project for understanding tax regulations in various Provinces & Territories and CRA's Mission to ensure compliance of tax, benefits, and related programs on behalf of governments across Canada, thereby contributing to the ongoing economic and social well-being of Canadians. .

- It can be used as a basis for analyzing taxes in accordance with external factors of a project, and making an executive decision, or an organizational strategy so that CRA's Vision of putting its people first by trusted, fair, and helpful means can be met.

- Meaningful insights with Descriptive Statistics & Visualizations can fulfill CRA's Promise of contribution to the well-being of Canadians and the efficiency of government by delivering world-class tax and benefit administration that is responsive, effective, and trusted.

THANK YOU!