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Forecasting models for LMDA performance targets

2019-2022

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Introduction

The Labour Market Development Agreement (LMDA) is the mechanism used by the Government of Canada to transfer Employment Insurance (EI) funding to provinces and territories.

In this document, it is presented the historical data about socio-economic and labour market context, local priorities, the characteristics or requirements of clients, and the funds available for the BC Benefits and Measures. This information allows us to estimate the future values for the targets: active EI claimants accessing BC benefits and measures, EI claimants returned to employment and savings to the EI account for the next years. In addition, the assumptions of the methodology and the methodology used in detail are defined, as well as the results. Finally, the conclusions and limitations are presented.

Background



Background

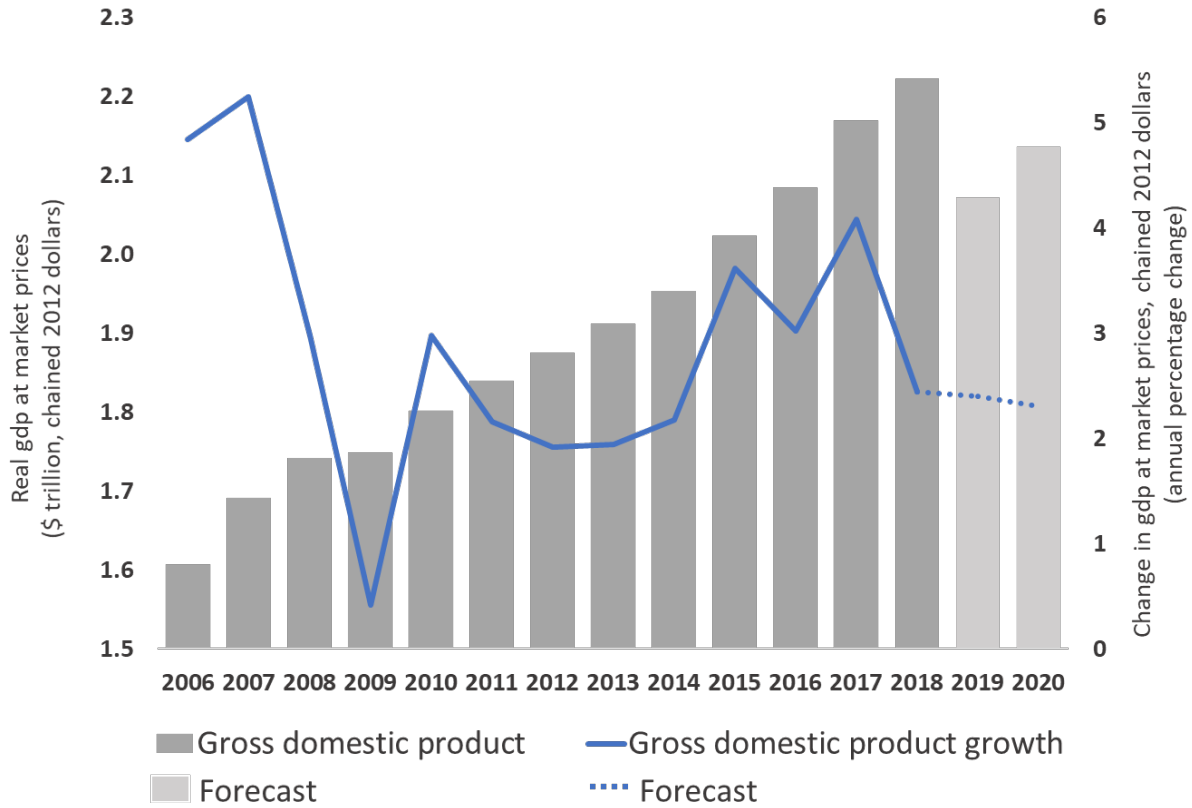
LMDA Program Accountabilities and Targets

- WorkBC employment services program **provide British Columbians with the specific skills and supports they require to attain sustainable employment.**
- Since 2008, the Employment and Labour Market Services Division manages the WorkBC Program via federal Labour Market Development Agreement (LMDA) funding.
- Participation in LMDA-funded programs provides tools to help overcome labour market challenges in local economies. For instance, they help active claimants recover from job loss and leave poverty.
- The division is responsible for administering the program on behalf of the Province of British Columbia.
- LMDA Annual Plan is one of the deliverables, and the Analytics team is responsible for monitoring and forecasting the three required LMDA Performance Targets.

Background - Economic overview

Economic Growth - real gross domestic product (GDP)*

- After years of above-average GDP growth, B.C.'s economy is expected to moderate in the next years.
- In FY1819, B.C.'s real GDP growth (+2.6%) exceeded the national average (+2.0%) for a fifth consecutive year in 2018.
- The Province's economic growth, forecasted before COVID-19, in the FY2019/20, was projected to be 2.4% in 2019 and 2.3% in 2020.
- B.C. economy dives in 2020 on COVID-19 impact.
- The new previsions for FY2021 consider the economic growth of -6.8% in 2020 and 3.1% in 2021.



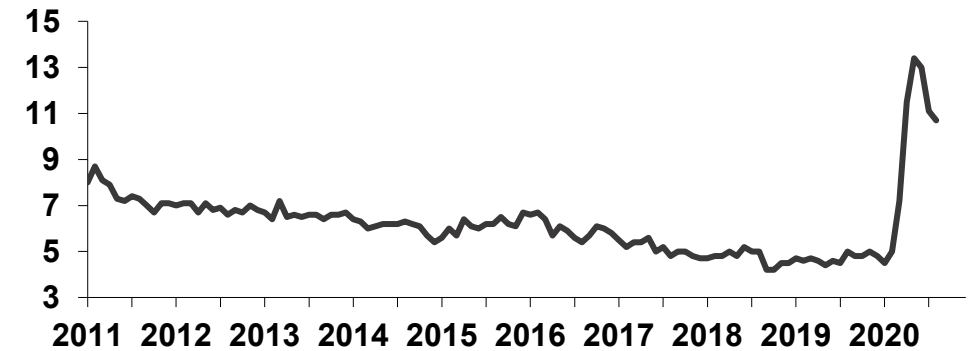
*Fiscal year beginning in 2018 and ending on 2019 (FY1819), in 2012 constant prices. Forecast source: Economic and Fiscal Update 2020-2021

Background

Labour market conditions in British Columbia*

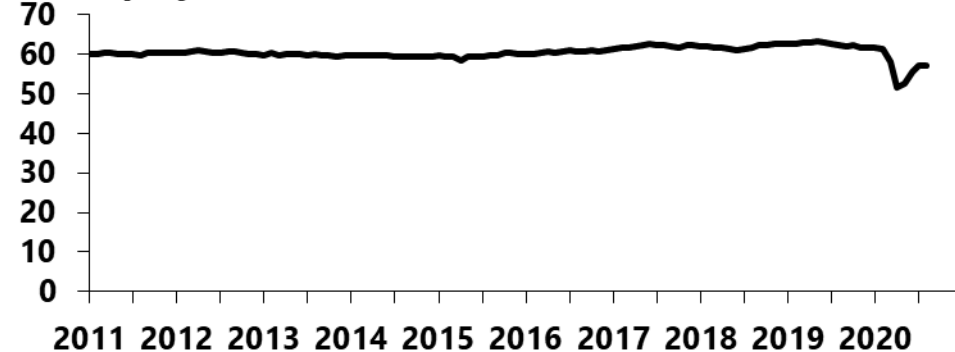
- B.C.'s labour market continues to experience some of the tightest conditions in Canada.
- Unaffordable housing has made it difficult to attract and retain workers in many areas of the province.
- Also, in the new panorama, it is important to consider the effects of the COVID-19.
- The new previsions for FY2021 consider an unemployment rate of 11.3% in 2020 and 8.9% in 2021 (almost the double that the expectative for the medium-term 5.5%).

BC Unemployment Rate*:



*Seasonally adjusted

BC Employment¹ Rate*:



*Seasonally adjusted

Background

British Columbia Priorities for FY1819

Aimed at strengthening the Province's labour market, by:

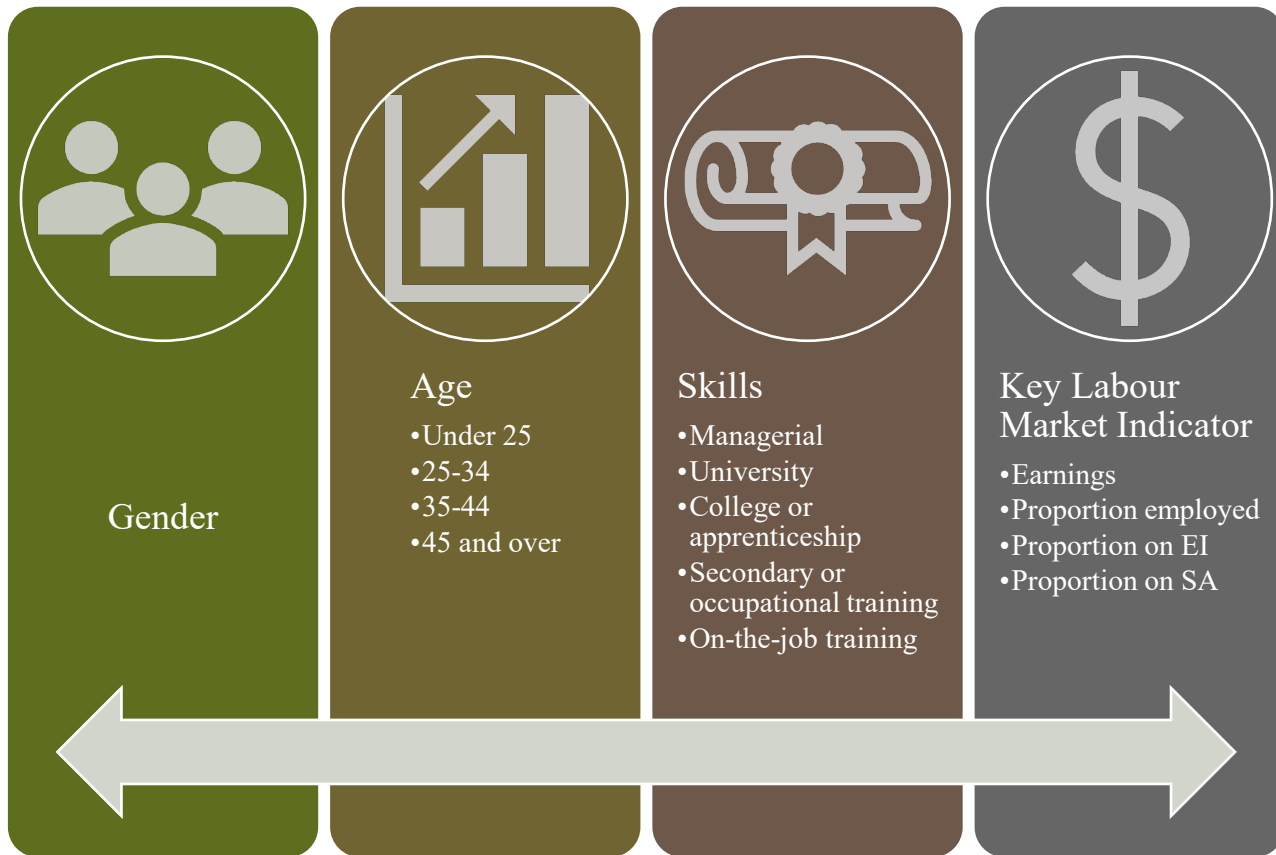
- delivering responsive programs and services to better align skills training with local labour market needs.

This included:

- investments in training to better align British Columbians with sustainable job opportunities and to meet employer demands;
- implementation strategies to engage all British Columbians, including underrepresented groups;
- partnerships with local communities and organizations to further develop and increase community-based partnerships across the Province; and leveraging and enhancing labour market information and knowledge.

Background

Clients Characteristics



Background

Funds available for the BC Benefits and Measures

Revenue (\$ millions)	Updated Forecast 2018/19	Budget Estimate 2019/20	Plan 2020/21	Plan 2021/22
Labour Market Development Agreement	\$323	\$321	\$333	\$332

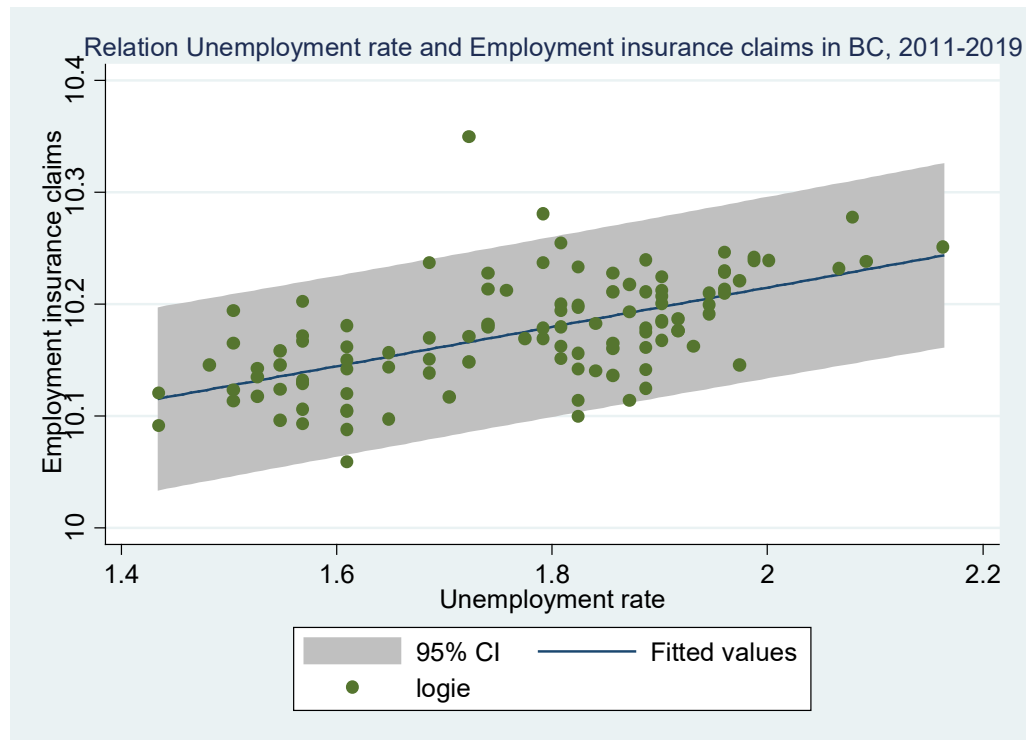
Methodology



Methodology

Considerations

- The number of EI claimants accessing WorkBC services is driven by the economic and labour market conditions in BC.
- The unemployment rate and the employment insurance claims are directly related.



Methodology Results

Table 1. Target Indicators, observed and estimated (2013-2022/estimation)

Year	Active EI Claimants	Target	EI Claimants Returned to Employment	Target	Savings (\$) to the EI account	Target
2012/13	31,953		16,777		112,512,524	
2013/14	34,612	39,000	20,040	24,000	121,846,795	104,000,000
2014/15	33,730	39,000	19,787	24,000	126,474,936	134,000,000
2015/16	35,891	37,500	19,552	21,750	125,294,701	130,000,000
2016/17	35,276	37,500	21,055	21,750	152,701,957	130,000,000
2017/18	32,881	37,500	20,997	21,750	136,556,392	142,000,000
2018/19	27,296	33,000	20,725	20,000	125,941,245	136,000,000
Average annual growth rate	-2.59%		3.58%		1.90%	
2019/20	26,589	33,000	21,467	20,000	128,334,129	136,000,000
2020/21	25,900	33,000	22,235	20,000	130,772,477	136,000,000
2021/22	25,230	33,000	23,032	20,000	133,257,154	136,000,000

- The data contains 3 variables with 7 observations each one. For the low number of observations, the best model for this forecast was using the Average Annual Growth Rate. With this assumption, Active EI Claimants, EI Claimants Returned to Employment, and Savings (\$) to the EI account for next year will increase to the same level as the Average Annual Growth Rate for the 2013/14-2019/20 period (2.59%, 3.58%, and 1.90%, respectively).
- However, with the new information about economic growth and unemployment rate, it is expected a higher number of EI claimants accessing WorkBC. For this reason, Work BC will lead to reaching a higher proportion of EI beneficiaries. With the new previsions that consider an unemployment rate of 11.3% in 2020 and 8.9% in 2021, the number of EI beneficiaries in BC could be more, for this, my proposal the target will remain in the same number that 2018/19: 33,000; 20,000 and 136,000,000, respectively.

Limitations and Results



Limitations

- After COVID-19, the exercises of forecasting have more challenges derivate of the high levels of risk, instability, volatility, and new paradigms in the economic and social behaviors.
- These estimations do not consider the effects in the changes of the Age Pyramid or advances in technology that increase the hourly productivity. Also, they do not have information to control the risk probabilities, such as Future outbreaks in B.C. and among B.C.'s trading partners, the evolution of public health policies and development of treatments and vaccines, workplaces adaptation and confidence, and the success of relief measures and supports and evolution of policies enacted by governments and central banks.
- The models need to be calibrated every time that we can have more consistent information and data, or methodologies.
- It is recommended to perform more tests to be able to introduce these new elements in the model forecasting.

Analysis and Discussion of Results

- After analyzing the background, we could see the most important elements within the economic overview, labour market conditions, B.C. priorities, client's characteristics, and funds available for the B.C. benefits and measures. This information allows us to model the trade for the LMDA Performance Targets: Active EI Claimants Accessing British Columbia Benefits and Measures, EI Claimants Returned to Employment and Savings (\$) to the EI account.
- As a result of the forecast and the considerations. It is proposed to consider a target of 33,000 for the Active EI Claimants, 20,000 for the EI Claimants Returned to Employment, and of 136,000,000 for the Savings (\$) to the EI account for next year.
- For last, during the exercise it was analyzed a multivariable model. This model used data from Statistics Canada using “Cansim” R Package to search for and retrieves data tables and series from Statistics Canada’s socioeconomic data repository, also the surveys with labour and employment insurance datasets. They contain historical structured and unstructured data sources, using variables such as unemployment rate, real GDP, active EI claimants, EI return claimants, labour force, part-time employment, education, productivity, retail sales, manufacturing, as well as migrants and indigenous characteristics and necessities, and it was trying to control the structural movements in the historical data information. This model is part of my work in progress.

Sources:

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- Employment and Social Development Canada (2019) Canada's Poverty Reduction Strategy - An Update, 2019.
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Additional Charts



Employment, BC.

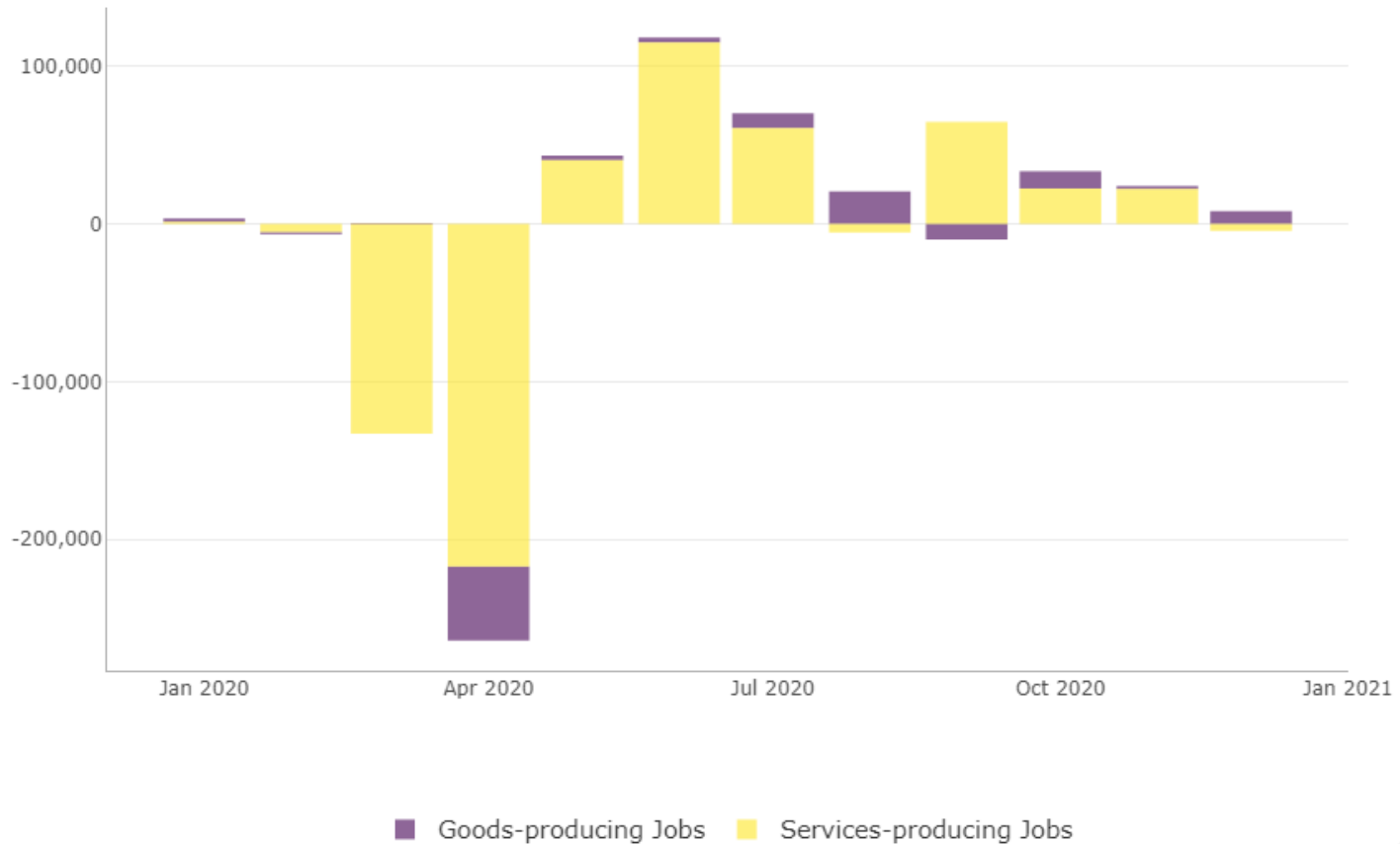


(3-month-moving-avg, seasonally unadjusted estimates)

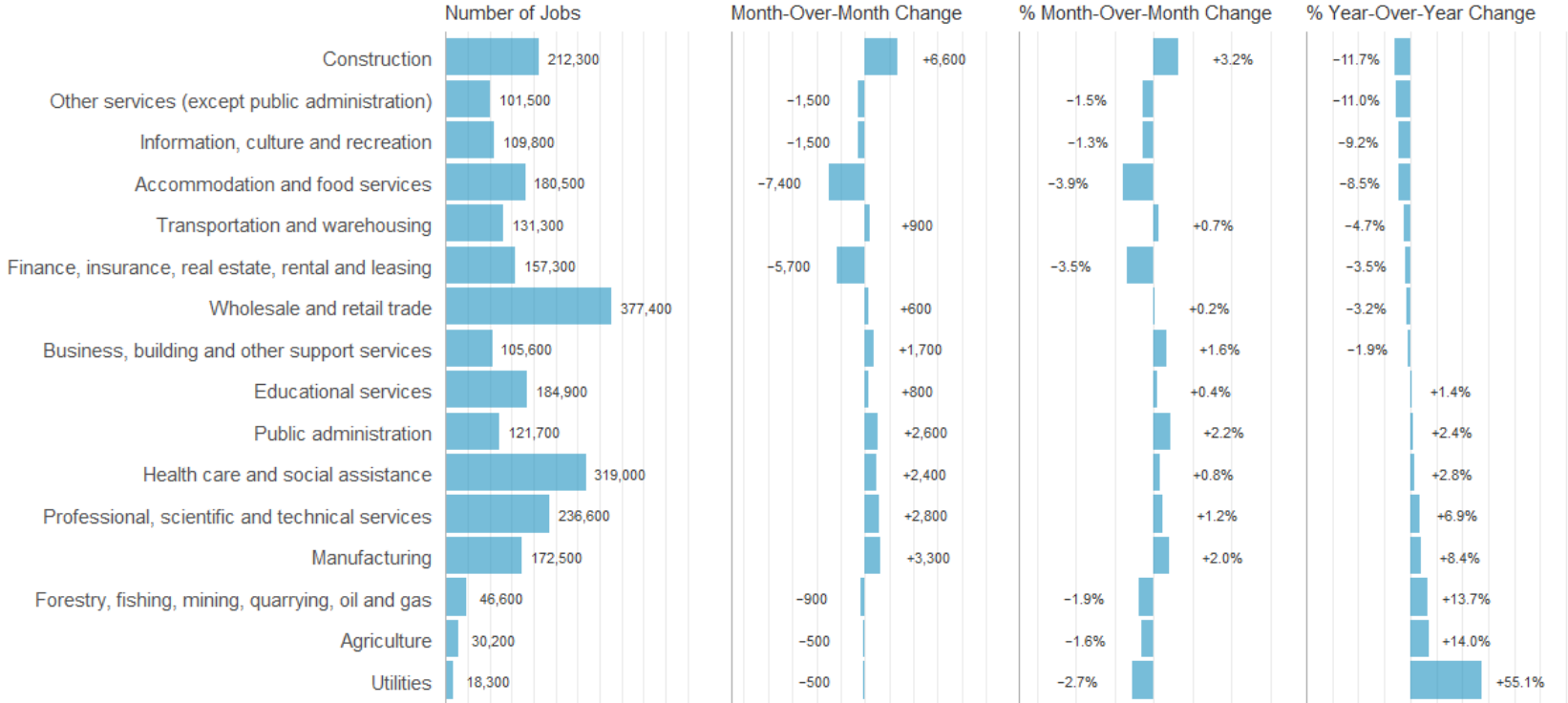
Number of Jobs for Men in B.C. Job Type & Age



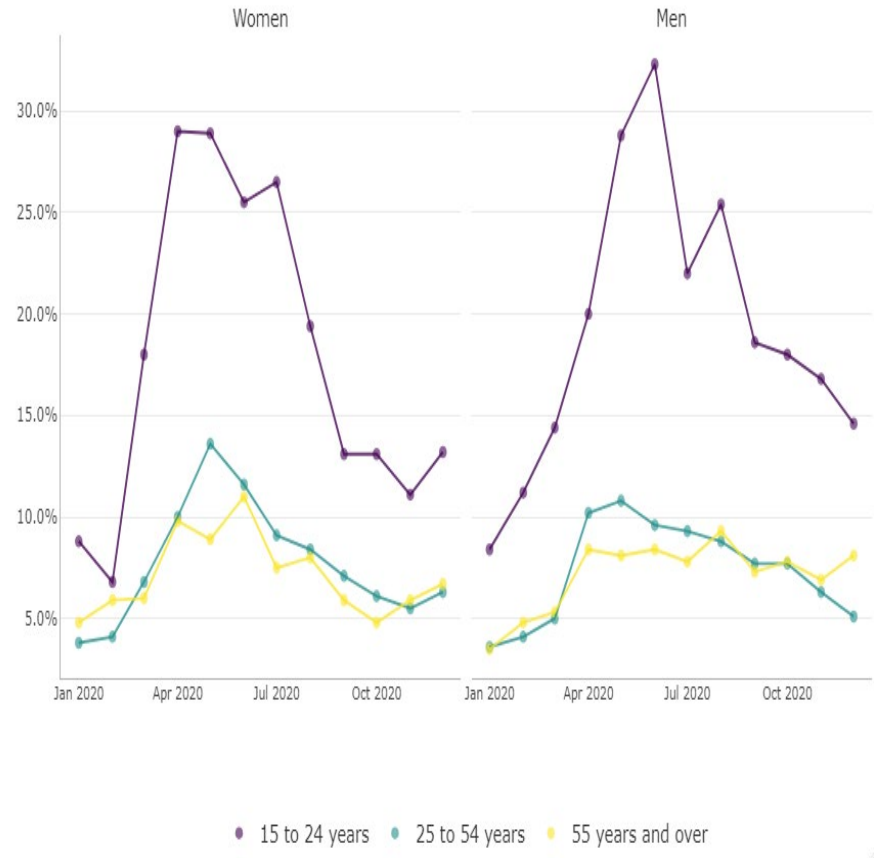
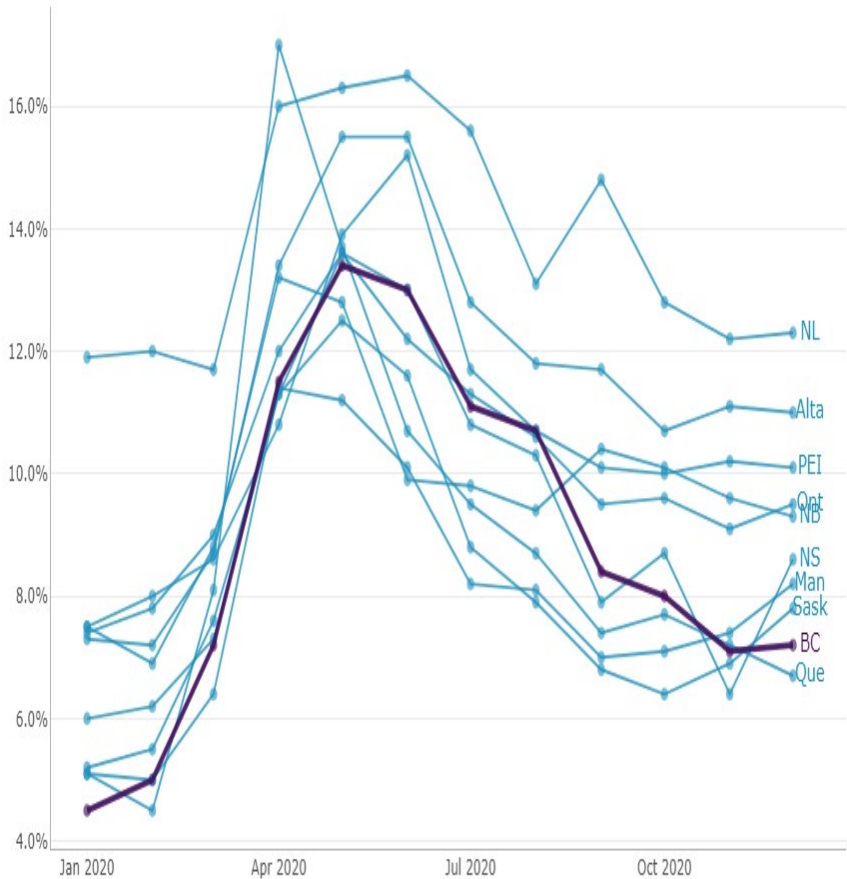
Goods & Services-producing Jobs in B.C.



Number of jobs per industry, BC,



Unemployment rate for province or territory and Women and Men per group of age



● 15 to 24 years ● 25 to 54 years ● 55 years and over



**THANK
YOU!**