**Exploration and Analysis of the CEWS Program**

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**Part 1: Introduction**

The Canadian Employment Wage Subsidy (CEWS) program was introduced by the government of Canada as a means of supporting Canadian businesses who experienced a significant decline in revenue during the Covid-19 global pandemic. While the program is ongoing, data has currently been made public for the first eight four-week “claim periods”, between March 15 and September 27, 2020. In total, over $55 billion in CEWS subsidies have been claimed in these eight months. However, data for the final two claim periods may be incomplete, as businesses still had time to report their claims at the time of dataset compilation.

The primary data source for this report is the **Canada Emergency Wage Subsidy Regional and Community-level Database[[1]](#footnote-1)**. This dataset provides data on subsidy value, business counts, and supported employees, with both geographic and industry aggregation data. The Standard Geographical Classification 2016 (SGC) is used to partition geographic regions, and data is available at the granularity of Canada-wide, Provincial, census agglomeration/census metropolitan area (CA/CMA), and census subdivision (CSD). Industries are divided according to the North American Industry Classification System (NAICS), and data is available aggregated over all industries, by 2-digit NAICS codes, and by 3-digit NAICS codes. 2-digit codes refer to industry sectors, while 3-digit codes refer to industry subsectors. Each row also contains a flag labelling the geographic region as either urban or rural, with any region outside a CA or CMA labelled as rural, and any region within a CA or CMA labelled as urban. Some data is suppressed to meet the confidentiality requirements of the Statistics Act introducing some error into the more granular analysis.

Further public data was sourced from Statistics Canada to incorporate employment data within different levels of geographic granularity[[2]](#footnote-2) [[3]](#footnote-3). These datasets all contain data from the 2016 census, and as such introduce some error into any analysis involving employment ratios.

**Part 2: Overview of the CEWS Program, By Province and Industry**

Figure 1 provides a high-level overview of the CEWS first eight four-week claim periods, between March 15 and September 27, 2020.

**Figure 1**

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

There was high variance in the amount of CEWS money given between both industries and provinces. In figures 2 below, we see that while aggregating over all of Canada, the “manufacturing” industry received the most dollar value of subsidies approved through the CEWS program, followed by “construction”, and then “Professional, scientific and technical services”. When we look at the average subsidies given for each worker in the industry, “management of companies and enterprises” received the most by a wide margin.

Timeline

Description automatically generated with low confidence**Figure 2**

**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

On a provincial level, Ontario received the most CEWS subsidies. However, when controlled for population, Alberta received the most, followed by the Northwest Territories. Interestingly, Alberta received twice as much per worker compared to the neighboring Saskatchewan. Figure 3 summarizes the findings.

**Figure 3**

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021 and the 2016 Census.

**Part 3: Mining and Oil and Gas Towns Received the Most CEWS Subsidies per Capita**

The majority of CEWS subsidies in each claim period were given to businesses located in urban areas. Figure 4 shows the evolution and proportion of subsidies by geographic region urban/rural flag label.

**Figure 4**

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

**3.1. The Urban Census Agglomerations Receiving the Most CEWS Subsidies per Capita are Oil and Gas Dependent.**

When we examine urban areas, we see that the largest subsidies were given to various industries within Toronto and Montreal.

**Figure 5**

![Timeline

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

When we look at the total subsidies given by CMA/CA, we see an approximate rank ordering by the cities' populations, summarized in figure 6.

**Figure 6**

![Chart, bar chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

However, when regularized by the number of workers we get a very different ordering (as shown in figure 7).

**Figure 7**

![Chart, bar chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021 and the 2016 Census.

For the top three in figure 7, we look at the breakdown of which industries the subsidy money went to. In the below figures, we show the three most subsidized industries, and group the rest into "others". We see that all three of these regions have "mining, quarrying, and oil and gas extraction" as their most subsidized industry.

**Figure 8**

![Chart, pie chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

When we examine the most subsidized industry in each city on our list of 15, we see that "mining, quarrying, and oil and gas extraction" is heavily represented on the top three, while "manufacturing" dominates the rest. There are only two cities with "mining, quarrying, and oil and gas extraction" as their most subsidized industry which don't appear at the top of this list. Those are North Bay, Ontario and Sylvain Lake, Alberta.

**Figure 9**

![Chart, bar chart, funnel chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021 and the 2016 Census.

The outliers here are Gander, Newfoundland and Edmonton, Alberta. Gander is an important refueling stop for transatlantic flights and its main economic industry is transportation[[4]](#footnote-4). Travel restrictions due to Covid-19 most likely affected this region.

Figures 10 and 11 below provide an industry breakdown of subsidy money for urban centers in each province which received the most CEWS support. Note that according to the urban/rural definitions used, Nunavut has no urban areas.

**Figure 10**

![Chart, timeline, bar chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

Chart, timeline

Description automatically generated**Figure 11**

**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

**3.2. Rural Alberta Received the Largest Portion of Rural Subsidies per Worker**

When we look at the ten largest individual subsidies given to rural communities, we see that some of the largest went to "Accommodation and food services" in the tourist towns Banff, Whistler, and Jasper. "Mining, quarrying, and oil and gas extraction" is also heavily represented.

**Figure 12**

![Chart, bar chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

We see that within rural Canada, manufacturing was given the most CEWS subsidies by a wide margin.

**Figure 13**

![Chart, bar chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

When we look at the rural communities which received the most subsidy money, we see that the list is dominated by towns in Alberta. The story is similar when we control for population. Note that only CSDs with a worker count greater than 500 are considered, to control the noise of small denominators.

**Figure 14**

![Chart, bar chart

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![Chart, bar chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

We see in Figure 15 below that within the rural parts of each province, Quebec received the most CEWS subsidies, with Alberta second.

**Figure 15**

**Chart, pie chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

As in our analysis in urban areas, figures 16 and 17 show the industry breakdown of subsidy money for the rural area in each province which received the most CEWS money.

**Figure 16**

Chart, bar chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

Timeline

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

Many of these subdivisions have received large subsidies in only one or two industries, and we note some trends.

* Whistler, Mont-Tremblant, Borden-Carleton, Dawson, and Clarenville all received large subsidies in accommodation and food services, retail trade, and recreation.
* Selkirk, Caraquet, Borden-Carleton, and Haldimand all received large subsidies in manufacturing.
* Kings, Grande Prairie, Iqualuit, and Inuvik all received large subsidies in construction.
* Kindersley and Grande Prairie both received their largest subsidies in mining, oil and gas.
* Northern regions, including Grande Prairie, Inuvik, and Iqaluit, all received large subsidies in transportation and warehousing.

It seems that across Canada, the most affected rural areas are very dependent on a select few industries which were all significantly affected by the coronavirus. We expect that most rural areas which received large CEWS subsidies have economies that are dependent on these industries.

* **Retail trade** and **food and accommodation services** are both industries reliant on tourism, especially within rural areas. Places like Whistler, Mont Tremblant, Dawson, and Clarenville are all popular tourist destinations. With stay-at-home orders and social distancing measures due to the pandemic, these places lost most of their customer base, especially within these two industries.
* **Manufacturing** plants had to be significantly overhauled to meet Covid-19 regulations. Typically, workers in many of these workplaces would be in proximity with each other, and significant (and expensive) changes had to be made to allow for social distancing and improved hygiene.
* Restrictions to non-essential workplaces in the **construction industry** occurred across Canada heavily affecting the economic sector.
* The **mining, quarrying, and oil and gas extraction** industry required substantial subsidies to remain operational during the pandemic. Many workers in these industries live in work camps, the structure of which had to be significantly overhauled. Personal quarters had to be expanded to allow for social distancing, extra support staff had to be hired, and extra equipment had to be purchased.
* **Transportation and warehousing** industry were heavily affected due to travel restrictions.

**Part 4: Rural Alberta Received Large CEWS Subsidizes Due to Oil and Gas, and Tourism.**

Across all the analysis done so far, an obvious point is that Alberta, and in particular rural Alberta, has received a disproportionate amount of CEWS funding. On a provincial level, Alberta received the most funding per-capita. Three of the province's seven CMA/CAs were in the 15 most subsidized in Canada, with Wood Buffalo taking the top spot. However, most striking is the province's prevalence in the top of the list of most subsidized rural areas. When looking at total subsidies given to rural CSDs, Alberta holds 9 of the top 15 spots. When we normalize by worker count, Alberta holds 8 of the top 15 spots.

We start by looking at the four industries in rural Alberta which received the most CEWS money. We see that rural Alberta received about half of the total mining, quarrying, and oil and gas extraction subsidies given out in all of Canada, while receiving proportionately less manufacturing money.

**Figure 18**

Chart, bar chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

**Figure 19**

Chart, bar chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

While rural proportions are smaller in general, the standout point is that over 90% of accommodation and food service workers were supported in Alberta. Rural Alberta also holds the largest proportion for construction workers, at about 30% supported.

**Figure 20**

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*Note: Provincial urban/rural worker counts are not available for mining, quarrying, and oil and gas extraction, as the industry was aggregated with others in this dataset*

**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

Rural Alberta was particularly affected by the Covid-19 pandemic due to its reliance on tourism and oil and gas. Industries related to tourism were heavily affected due to travel restrictions and stay at home orders, and places like Banff, Jasper, and Hinton sustain themselves on the money of people from out of province and out of country coming to see the Rockies. We see this in the staggering proportion of food and accommodation workers in rural Alberta who were supported by CEWS at over 90%. Aside from the tourism angle, a lot of hotels and restaurants in rural Alberta typically make money from remote workers in mining, oil and gas, and forestry who live in bush camps within the province. In typical years, these workers would travel to the local towns on their days off and spend money at hotels, bars, restaurants, and retailers. However, restrictions were put in place that prevented remote workers from travelling into town to prevent the spread of Covid-19 into bush camps, which lost local businesses the revenue they would have earned from this significant clientele.

Furthermore, we have seen earlier that mining, quarrying, and oil and gas extraction was the most expensive industry to subsidize on a per-worker basis. Over half of the subsidies given in this industry were in rural Alberta, and some of the largest rural subsidies were given to rural Alberta in this industry.

**Part 4: Some CSDs Received Their Largest Subsidies in Atypical Industries.**

We have seen that for most subdivisions, the largest subsidy given was in one of a select few industries. We see in the figure 21 below that of the approximately 1,700 census subdivisions which received at least one (non-suppressed) subsidy between March and October, about 1,100 had construction, manufacturing, or accommodation and food services as their most subsidized industry.

**Figure 21**

Chart, bar chart

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**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

"Information and cultural industries", "educational services", "arts, entertainment and recreation", and "administrative and support" were all the most subsidized industry in five or less CSDs each. Given the uncommon occurrence of these industries, figure 22 shows the breakdown of CEWS subsidies given to each in census subdivisions.

A picture containing timeline

Description automatically generated**Figure 22**

**Source:** Authors’ calculations based on Canada Revenue Agency’s Canada Emergency Wage Subsidy microdata file, January 4, 2021.

**References**

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1. Statistics Canada. (2021). Canada Emergency Wage Subsidy Regional and Community-level Database, Version 1.0. <https://www150.statcan.gc.ca/n1/pub/11-26-0003/112600032021001-eng.htm> [↑](#footnote-ref-1)
2. Statistics Canada. Table 14-10-0377-01 Employment by class of worker and industry, annual (x 1,000) DOI: <https://doi.org/10.25318/1410037701-eng> [↑](#footnote-ref-2)
3. Statistics Canada, 2016 Census of Population, Statistics Canada Catalogue no. 98-400-X2016321. <https://www150.statcan.gc.ca/n1/en/catalogue/98-400-X2016321> [↑](#footnote-ref-3)
4. <https://www.cafconnection.ca/Gander/In-My-Community/About-Gander.aspx#:~:text=The%20main%20economic%20industries%20for,driven%20by%20the%20service%20industry.&text=Health%20care%20and%20educational%20facilities,Gander's%20high%20standard%20of%20living>. [↑](#footnote-ref-4)