Innovation, Science and Economic Development Canada
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Canada

State of Canada's Aerospace Industry Report

Summer 2023

AIAC
Aerospace Industries Association of Canada
L'Association des industries aérospatiales du Canada

TABLE OF CONTENTS

THE REPORT OVERVIEW

The report is a partnership:

- Multi-year collaborative analytics agreement with the Aerospace Industries Association of Canada (AIAC) and Innovation, Science and Economic Development Canada (ISED)

The report is fact-based:

- Data sourced from government agencies and international independent subject matter experts
- Economic impact models and innovation indicators[1] informed by experts from the Organisation for Economic Co-operation and Development (OECD)

This year's report continues to include a focus on the Canadian and global aerospace industries' recovery from the COVID-19 pandemic:

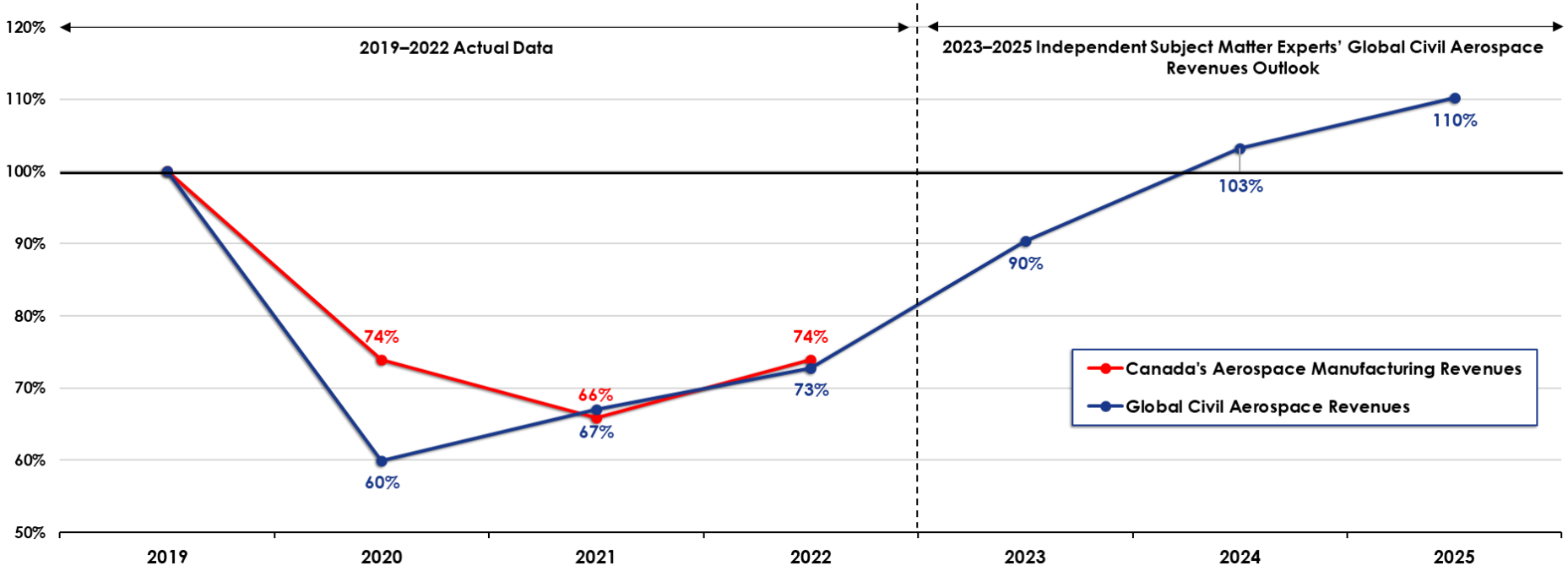
- International comparison and global market outlook
- 2019–2022 comparative analysis

[1] See Annex 2 for detailed methodology principles.

COMPARATIVE ANALYSIS, 2019–2022

Between 2021 and 2022, Canadian aerospace manufacturing[2] revenues[3] increased, marking the start of its pandemic recovery

Global Civil Aerospace Revenues Recovery Index, 2019–2025



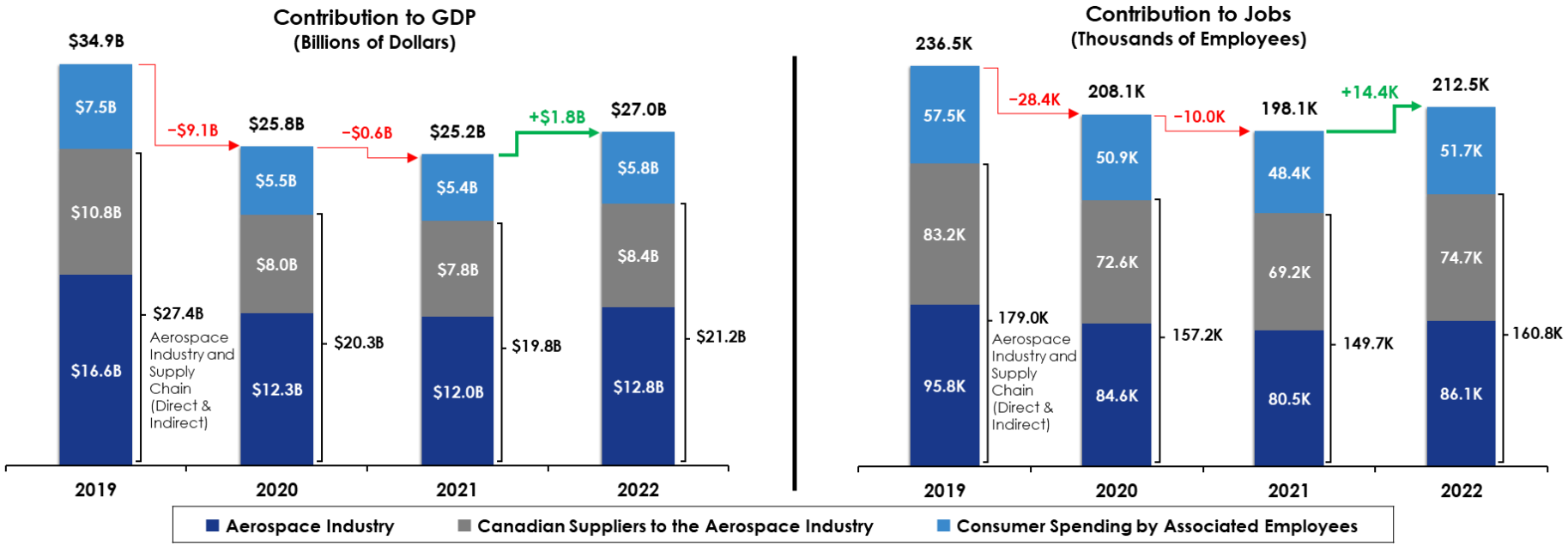
- According to international independent subject matter experts, global civil aerospace revenues are forecast to return to pre-pandemic levels by 2024

[2] Canadian aerospace manufacturing includes production of aircraft (airplanes and spacecraft), helicopters, flight simulators, engines, avionics, landing gears, and other parts and components.
[3] See Annex 4 for a comparative analysis of aerospace revenues from 2018 to 2022.

ECONOMIC IMPACT

In 2022, the Canadian aerospace industry saw growth in its contribution to both GDP[4] and jobs

Aerospace Industry Contribution to the Canadian Economy, 2019–2022[5]



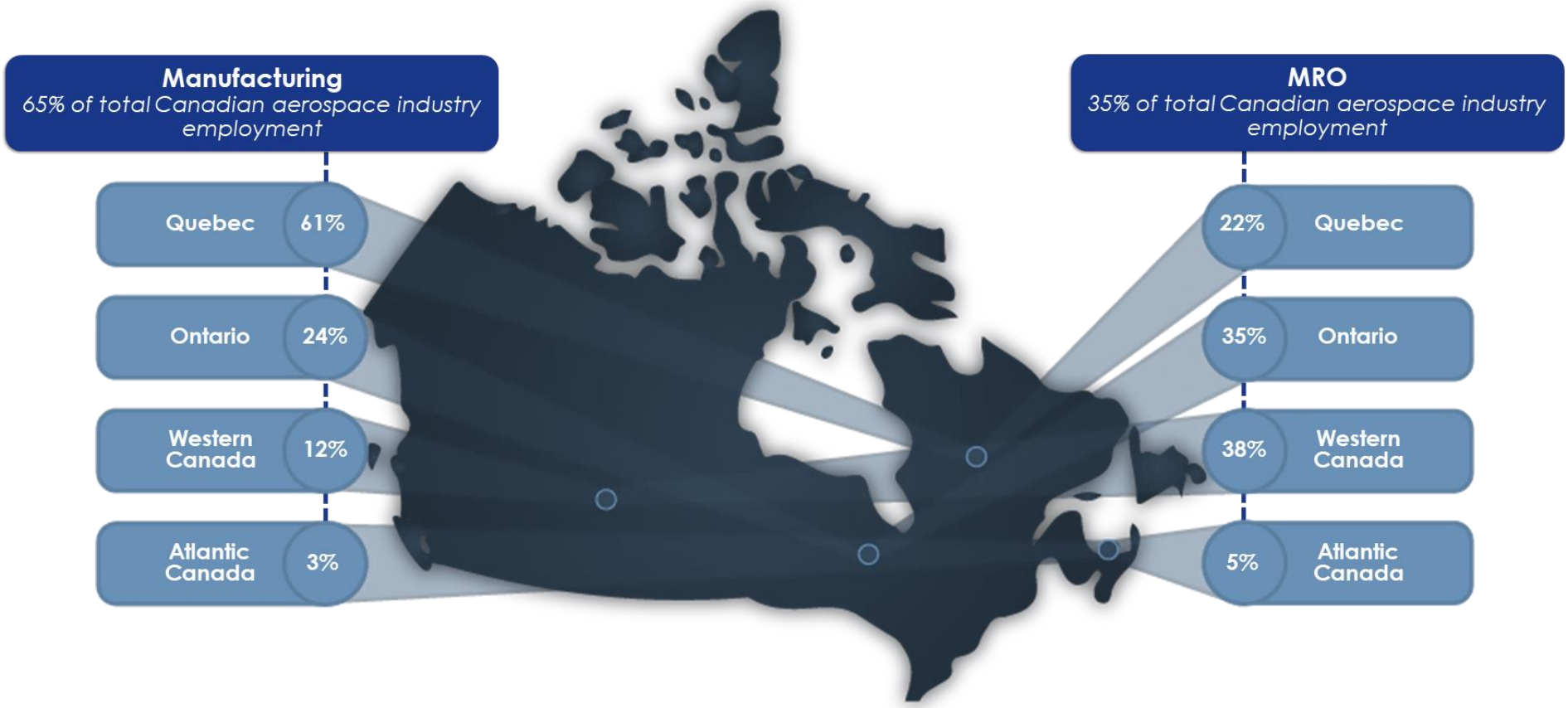
- In 2022, the Canadian aerospace industry contributed close to $27B to GDP and over 212,000 jobs to the Canadian economy
  - ➢ This was an increased contribution to Canada's economy of $1.8B to GDP and 14,400 jobs between 2021 and 2022
- The aerospace industry's contribution to the Canadian economy remains below pre-pandemic levels

[4] Gross Domestic Product (GDP)
[5] See Annex 2 for detailed methodology principles and Annex 3 for a detailed analysis of economic impact indicators.

REGIONAL BREAKDOWN

Between 2021 and 2022, all regions maintained their relative employment share across the aerospace manufacturing and MRO[6] services sectors

Share of Aerospace Industry Employment by Region, 2022[7]

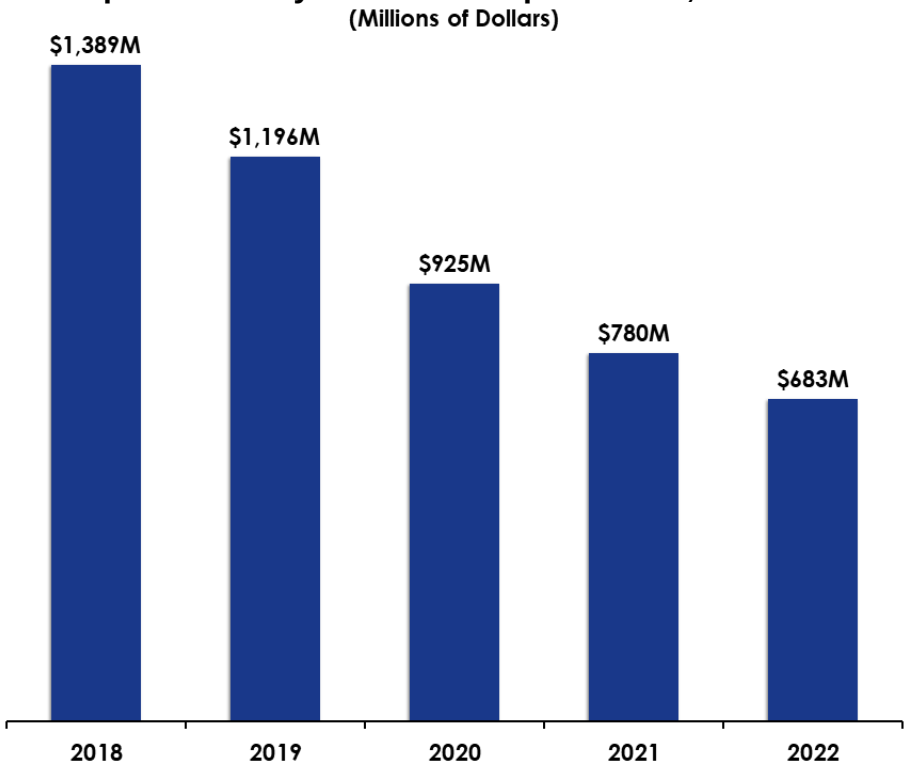


[6] Maintenance, repair, and overhaul (MRO). See Annex 1 for a list of the main activities associated with Canadian aerospace manufacturing and MRO services.
[7] See Annex 4 for a comparative analysis of aerospace employment from 2018 to 2022 and Annex 5 for a comparative analysis of the share of aerospace employment by region from 2021 to 2022.

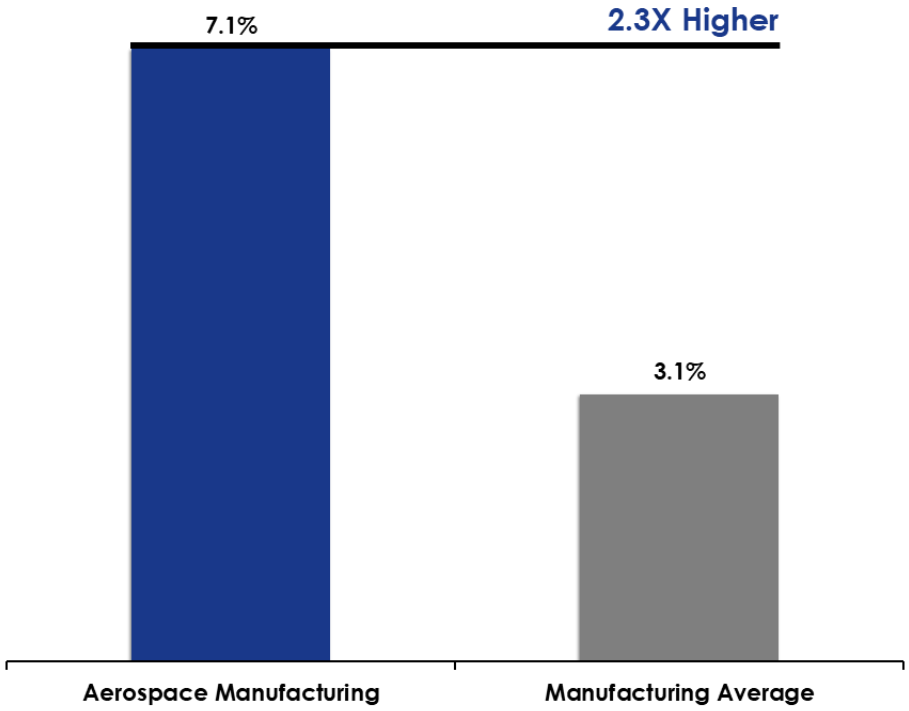
INNOVATION

Despite declining R&D[8] expenditures, the Canadian aerospace industry maintained its #1 R&D ranking among all Canadian manufacturing industries in 2022

Aerospace Industry Total R&D Expenditures, 2018–2022



R&D Intensity, 2022



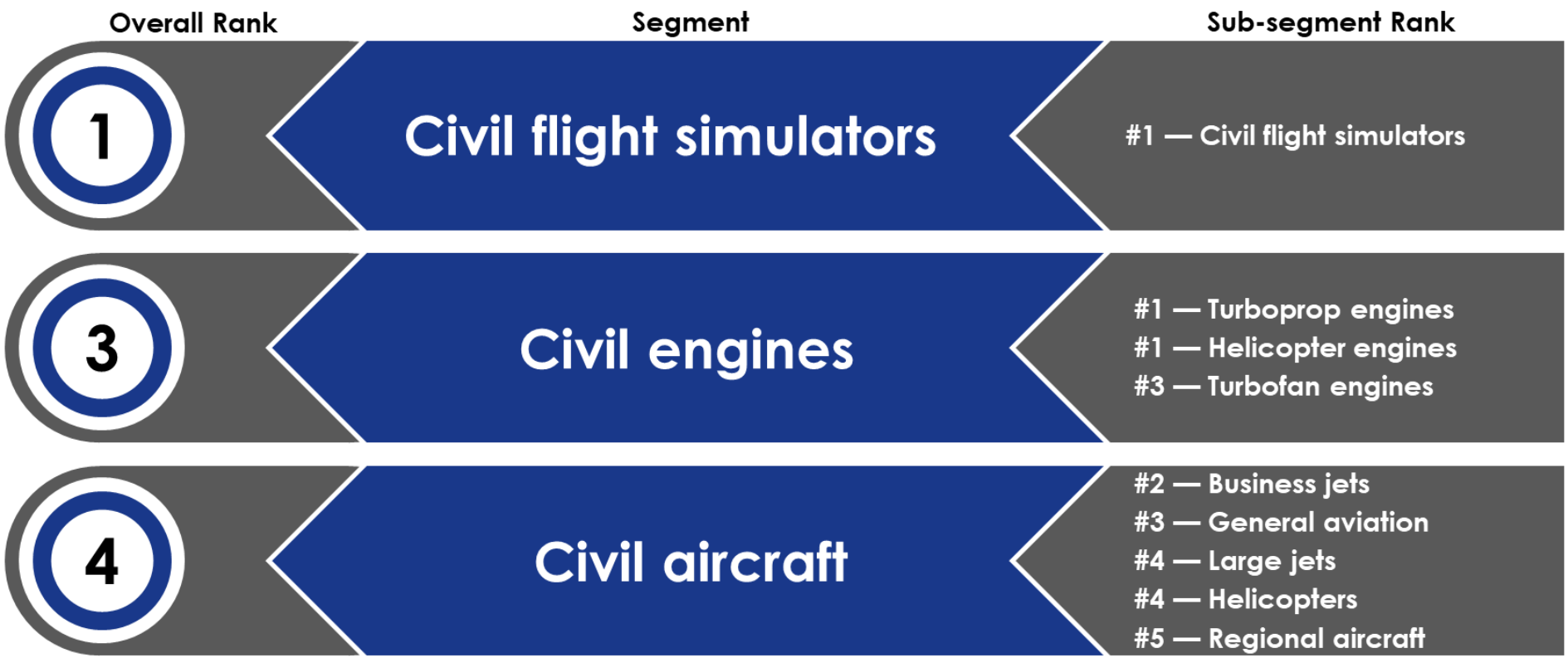
- In 2022, the aerospace industry invested over $680M in R&D, resulting in a R&D intensity over 2X higher than the manufacturing average

[8] Research and development (R&D) is measured in terms of the dollar value of R&D activity. Industry-level R&D intensity is measured as the ratio of R&D performed by a given industry or sector relative to its GDP contribution. See Annex 4 for a comparative analysis of aerospace R&D from 2018 to 2022.

RANKINGS

In 2022, the Canadian aerospace industry maintained its product range diversification

Canada's Civil Aerospace Rankings, 2022[9]



- Canada is the only country that ranked in the top 5 across civil flight simulator, engine, and aircraft sub-segments[10] in 2022

[9] Rankings are based on the dollar value of final production.
[10] General aviation includes all aircraft not operated by commuter or airline service providers and excludes business jets and helicopters.

EXPORTS

In 2022, the Canadian aerospace manufacturing industry exported close to $18.7B and actively participated in global supply chains

Share of Aerospace Industry Exports by Product[11] Category, 2022[12]

- More than 80% of aerospace manufacturing revenues were export-oriented in 2022, of which close to 60% were supply chain-related[13]

[11] Aircraft include airplanes and spacecraft.
[12] Share is based on the dollar value of exports.
[13] Engines and landing gear include their respective systems and components.

KEY FINDINGS

- Between 2021 and 2022, the Canadian aerospace industry's revenues, GDP and jobs increased
    - In 2022, the Canadian aerospace industry contributed close to $27B to GDP and over 212,000 jobs to the Canadian economy
    - Although still below pre-pandemic economic contributions, this marks the start of its pandemic recovery
- In 2022, the Canadian aerospace industry maintained its #1 R&D ranking among all Canadian manufacturing industries
    - The aerospace industry invested over $680M in R&D, a decline from 2021, furthering a trend in R&D investments since 2018
- In 2022, the Canadian aerospace industry maintained its product range diversification
- In 2022, the Canadian aerospace manufacturing industry exported close to $18.7B and actively participated in global supply chains

ANNEXES

Annex 1: Main Activities Associated with Canadian Aerospace Manufacturing and MRO Services

Aerospace Manufacturing	Aerospace MRO Services[14]
Main activities: • Aircraft assemblies, subassemblies, and parts • Aircraft engines and engine parts • Aircraft fuselage, wing, tail, and similar assemblies • Tail and wing assemblies and parts (empennage) • Flight simulators • Aerospace product prototypes • Space systems • Telecommunication satellites and components • Avionics • Helicopters, propellers, and parts	Main activities: • Aircraft heavy maintenance, servicing and repairing • Aircraft engines maintenance, servicing and repairing • Aircraft components and other systems maintenance, servicing and repairing • Aircraft line maintenance (aircraft servicing at airports, excluding sales of fuel revenues) • Aircraft ferrying services • Aircraft inspection services • Aircraft testing services • Aircraft upholstery repair

Annex 2: Economic Impact Methodology Principles

- Aerospace industry data is compiled from Government agencies, such as Statistics Canada and the Canada Revenue Agency, and international independent subject matter experts, with firm-level adjustments to include key manufacturers of space products, avionics, and flight simulators as well as aerospace MRO service providers
- ISED economic modelling is based on Statistics Canada's latest (2019) Input-Output multipliers
  - Aerospace activities have been linked to the closest related specific economic impact multiplier
  - Total economic impact includes the aerospace industry (direct economic impact from enterprises for which aerospace is the main activity), Canadian suppliers to the aerospace industry (indirect economic impact from enterprises for which aerospace is not the main activity), and consumer spending by associated employees (induced economic impact)
  - Economic model estimations are not comparable to older estimates in previously published reports as Statistics Canada's administrative data and Input-Output multipliers are updated on a yearly basis for latest and past years
- Economic impact analysis is based on gross domestic product (GDP) and full-time equivalent (FTE) employment
  - GDP is the total unduplicated value of the goods and services produced in an industry, country or region during a given period
  - GDP better represents activity that occurs within Canada in contrast to revenues, which include R&D, employment, and revenues from outside of Canada

[14] Excludes MRO activities performed by manufacturers and airlines.

Annex 3: Economic Impact Indicators (2022)

	Impact on Canadian GDP (Billions of Dollars)				Impact on Canadian Jobs (Thousands of Employees)			
	Aerospace Industry	Canadian Suppliers to Aerospace Industry	Consumer Spending by Associated Employees	**Total**	Aerospace Industry	Canadian Suppliers to Aerospace Industry	Consumer Spending by Associated Employees	**Total**
Aerospace Manufacturing	$9.1	$4.9	$3.7	**$17.7**	56.3	42.7	34.3	**133.3**
Aerospace MRO	$3.7	$3.5	$2.1	**$9.3**	29.8	32.0	17.4	**79.2**
Aerospace Total	**$12.8**	**$8.4**	**$5.8**	**$27.0**	**86.1**	**74.7**	**51.7**	**212.5**

Annex 4: Industrial Indicators (2018–2022)

	Industry	2018	2019	2020	2021	2022	% Change 2021–2022	% Change 2018–2022
GDP (Billions of Dollars)	Aerospace Manufacturing	$11.4	$12.2	$9.1	$8.9	$9.1	2.2%	−20.2%
	Aerospace MRO	$4.5	$4.4	$3.2	$3.1	$3.7	19.4%	−17.8%
	Aerospace Total	**$15.9**	**$16.6**	**$12.3**	**$12.0**	**$12.8**	**6.7%**	**−19.5%**
Jobs (Thousands of Employees)	Aerospace Manufacturing	56.7	62.5	57.8	54.5	56.3	3.3%	−0.7%
	Aerospace MRO	32.8	33.3	26.8	26.0	29.8	14.6%	−9.1%

	Industry	2018	2019	2020	2021	2022	% Change 2021–2022	% Change 2018–2022
	Aerospace Total	**89.5**	**95.8**	**84.6**	**80.5**	**86.1**	**7.0%**	**−3.8%**
Revenues (Billions of Dollars)	Aerospace Manufacturing	$26.4	$31.0	$22.9	$20.4	$22.9	12.3%	−13.3%
	Aerospace MRO	$8.0	$8.1	$6.6	$6.4	$7.3	14.1%	−8.8%
	Aerospace Total	**$34.4**	**$39.1**	**$29.5**	**$26.8**	**$30.2**	**12.7%**	**−12.2%**
R&D (Millions of Dollars)	**Aerospace Total**	**$1,389.1**	**$1,195.8**	**$925.1**	**$780.0**	**$683.1**	**−12.4%**	**−50.8%**

Annex 5: Share of Aerospace Employment by Region (2021–2022)

Region	Aerospace Manufacturing		Aerospace MRO	
	2021	**2022**	**2021**	**2022**
Western Canada	12%	12%	39%	38%
Ontario	22%	24%	34%	35%
Quebec	62%	61%	22%	22%
Atlantic Canada	4%	3%	5%	5%

DATA SOURCES

1. **Comparative Analysis, 2019–2022**
    a. Forecast International (2019–2025), 2023
    b. ISED estimates based on latest revised data from Statistics Canada (2019–2022), 2023
    c. Teal Group (2019–2025), 2023

2. **Economic Impact**
    a. ISED economic model estimates (GDP in 2012 chained dollars) based on Statistics Canada's latest (2019) Input-Output multipliers, 2023
    b. See 1(b)

3. **Regional Breakdown**
    a. ISED estimates based on latest revised data from Statistics Canada, the Canada Revenue Agency, and firm administrative data (2021–2022), 2023

4. **Innovation**
    a. ISED estimates based on latest revised data from Statistics Canada and firm administrative data (2018–2022), 2023

5. **Rankings**
    a. Flight Global Civil Simulator Census (2021), 2023
    b. Forecast International (2022), 2023
    c. Teal Group (2022 and 2023), 2023

6. **Exports**
    a. See 1(b)
    b. S&P Global, Global Trade Atlas (2022), 2023

7. **Annex 3**
    a. See 2(a)
    b. See 1(b)

8. **Annex 4**
    a. ISED estimates based on latest revised data from Statistics Canada, the Canada Revenue Agency, and firm administrative data (2018–2022), 2023

9. **Annex 5**
    a. See 3(a)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