

The Fire Apparatus Industry: a 2021 Soap Operatic Update



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On Behalf of
FAMA
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One Life to Live: FAMA Industry Performance



Sage Policy
Group, Inc.



Photo: Portlandoregon.gov

Introduction

FAMA tasked Sage Policy Group (Sage) with analyzing FAMA and other industry-relevant data to generate insights regarding industry trends and likely future performance.

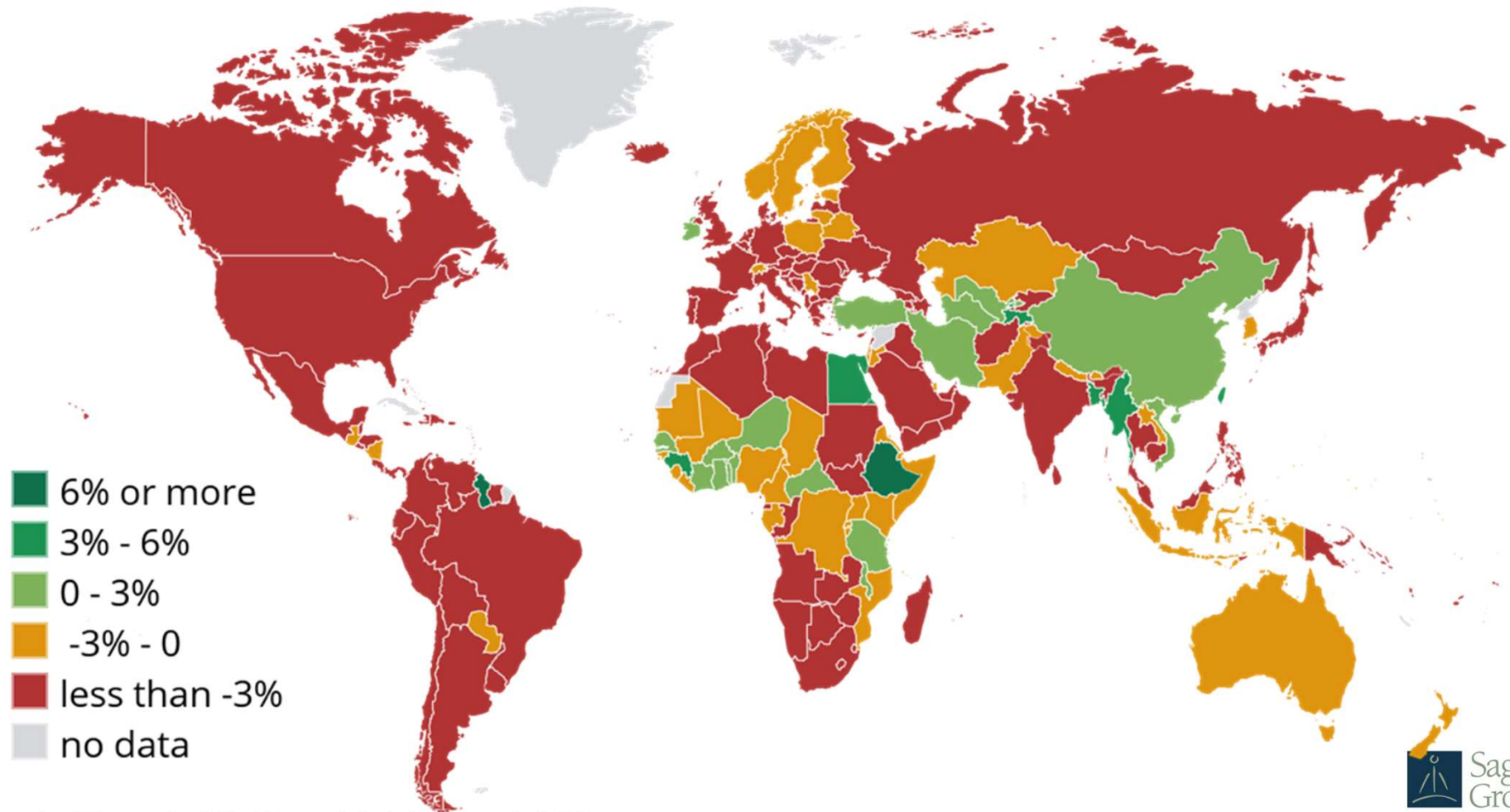
Two Primary Research Questions Addressed

There are two key questions that the analysis endeavored to answer:

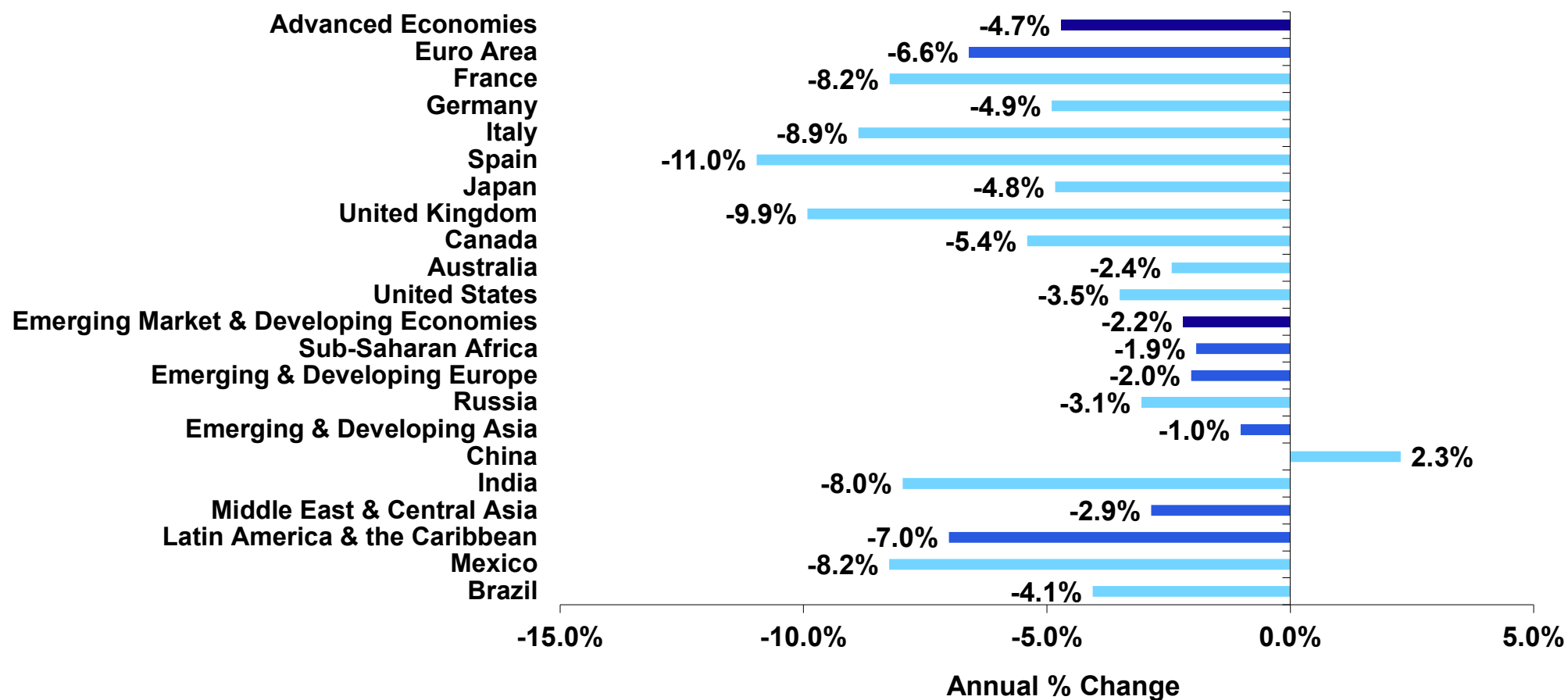
1. What can the industry expect in light of economic forecasts, capital budgeting, the state of the fleet, and known demographics?
2. What are the discernible impacts of COVID-19 on industry performance and prospects?

The Edge of Night

Real GDP Growth 2020, Estimated Annual Percent Change



Estimated Growth in Output by Select Global Areas, 2020



2020 Global Output Growth: -3.3%

The Days of Our Lives: Impact of COVID-19 on Fire Departments

COVID-19 presented a range of challenges for fire departments and first responders: PPE; health and safety; staffing; recruitment; fundraising/funding.



Impact of COVID-19 on Fire Departments: Health & Safety

An International Association of Fire Chiefs (IAFC) survey in March 2020 found that:

- 83% of responding departments were forced to implement alternative procedures or protocols due to limited PPE supplies;
- More than 57% of departments had been advised by their state/province's emergency operations center that they were unable to fill the organizations' PPE requests.

The IAFC also developed a dashboard indicating the number of firefighter personnel exposed, quarantined, and/or diagnosed with COVID-19 in the U.S.:

- When the IAFC dashboard was launched in early March 2020, there were 44 departments reporting, 55 personnel exposed to the virus, 46 in quarantine, and 1 diagnosed with the virus;
- By mid-April 2020, there were almost 2,200 departments reporting more than 10,500 firefighter personnel exposed, 4,852 in quarantine, and 575 tested and diagnosed with coronavirus.

Impact of COVID-19 on Fire Departments:

Financial Impacts I

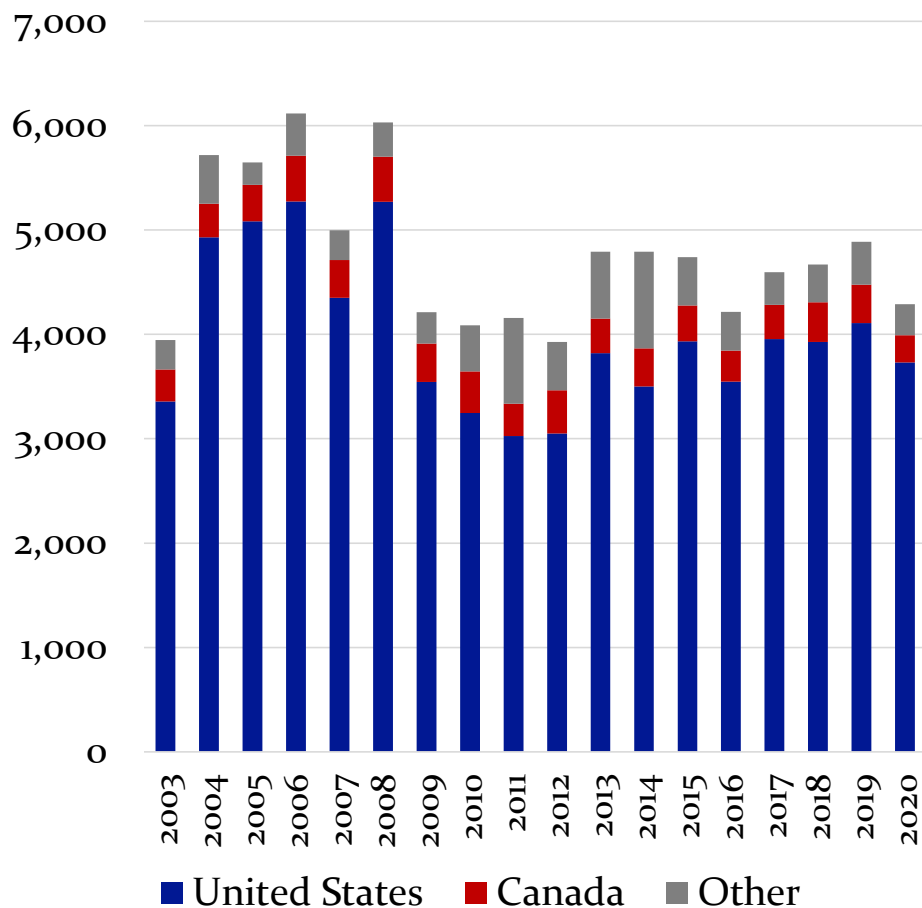
- The pandemic resulted in greater need for fire and emergency services while at the same time limiting fire department funding as North America's economy collapsed during the spring of 2020.
- FireRescue1 surveyed their online community regarding anticipated financial impacts of COVID-19. When asked which purchases they expected their department to delay or cancel, **apparatus** was the most frequently selected category (47% of respondents) followed by training (44%).

Impact of COVID-19 on Fire Departments:

Financial Impacts II

- The International Association of Fire Chiefs (IAFC) surveyed departments regarding lost revenues, furloughed personnel, and other economic implications of COVID-19:
 - 29% of responding departments sustained an increase in COVID-19 related expenses;
 - The aggregate budget loss among respondents was in excess of \$1.8 billion in 2020;
 - Anticipated 2021 budget losses among respondents totaled more than \$2.0 billion (and that's just a sample of departments in the U.S.);
 - Responding departments reported that 19-25% of their time was spent on logistics or planning for COVID-19 on average.

FAMA Members: Total Units Booked, By Country



	Units Booked			2015 v. 2020 % Ch.	2019 v. 2020	
	2015	2019	2020		Net	%
United States	3,933	4,108	3,729	-5.2%	-379	-9.2%
Canada	344	367	262	-23.8%	-105	-28.6%

- U.S. sales had been relatively steady from 2017-2019. In 2020, sales declined by more than 9%.
- After strong sales growth in 2018 and 2019, Canadian sales fell by more than 28% in 2020. Canadian sales were at their lowest observed level since 2005.

State Tax Revenue During COVID-19

Change in State Tax Revenue: April-December 2019 v. April-December 2020

State	% Chg.	State	% Chg.	State	% Chg.
Alaska	-42.5%	Missouri	-2.7%	California	1.2%
Hawaii	-17.0%	Minnesota	-2.5%	Virginia	1.2%
North Dakota	-14.8%	Connecticut	-2.5%	Kentucky	1.5%
Nevada	-11.8%	Indiana	-2.4%	South Carolina	1.7%
Florida	-11.3%	New Jersey	-2.4%	Georgia	1.9%
Oregon	-10.5%	New Hampshire	-2.0%	North Carolina	2.1%
Texas	-10.4%	Illinois	-2.0%	Maine	2.2%
Wyoming	-8.5%	Iowa	-2.0%	Vermont	2.2%
Louisiana	-7.5%	Tennessee	-1.3%	Arizona	2.4%
Delaware	-7.3%	Ohio	-0.9%	Washington	2.5%
Montana	-5.6%	Arkansas	-0.2%	Alabama	3.7%
West Virginia	-4.3%	Maryland	0.1%	New Mexico	4.3%
New York	-4.1%	Mississippi	0.3%	Colorado	5.7%
Oklahoma	-4.0%	Michigan	0.3%	South Dakota	6.3%
Pennsylvania	-3.1%	Wisconsin	0.5%	Utah	8.0%
Massachusetts	-2.8%	Nebraska	0.7%	Idaho	10.4%
Kansas	-2.7%	Rhode Island	0.8%	All U.S. States	-1.8%

Source: Urban Institute, State and Local Finance Initiative. Notes: For Nevada data is through November, for New Mexico and Wyoming data is through September.

Canadian Provincial Revenues During COVID-19

Projected FY2020/21 Revenue %Change

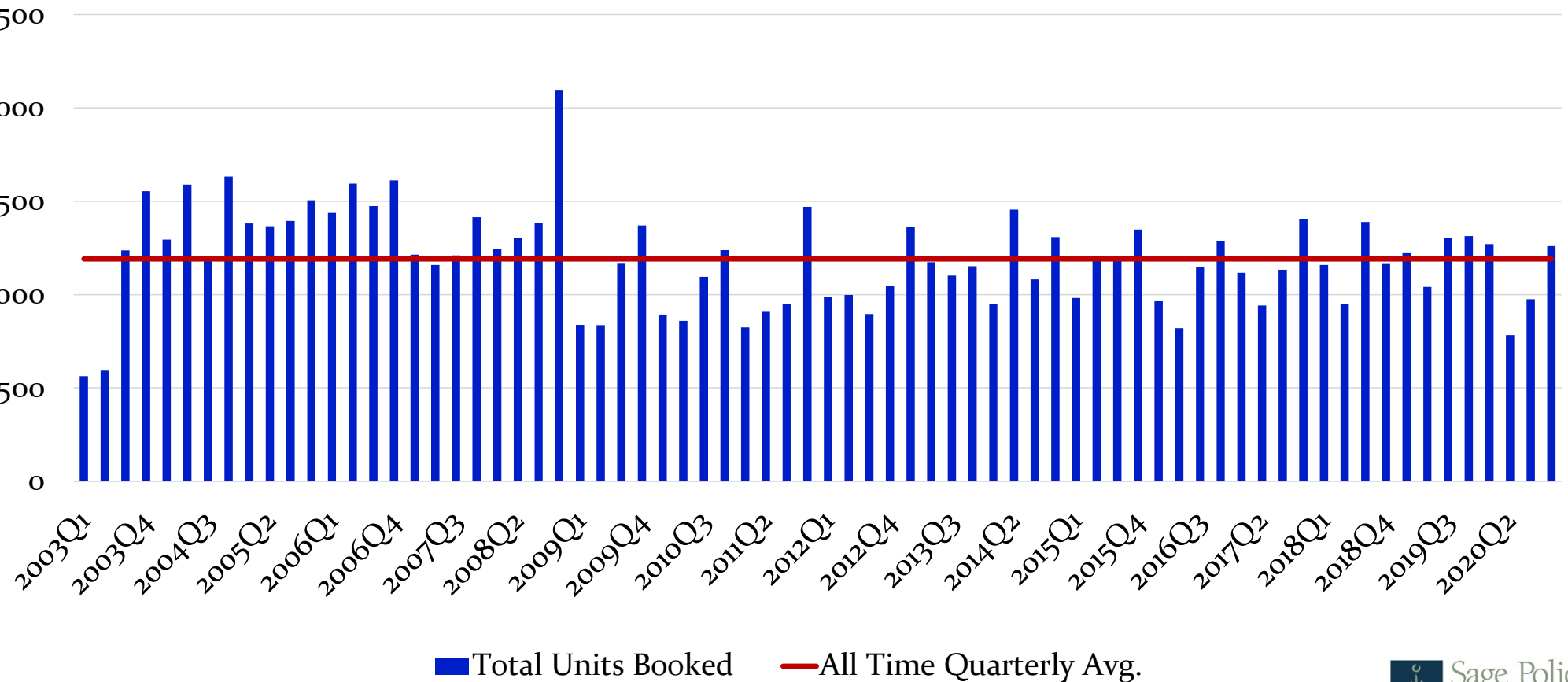
Province	Projected FY 2020/21 % Chg. in Revenues
British Columbia	-2.1%
Alberta	-8.5%
Saskatchewan	-4.9%
Manitoba	0.5%
Ontario	-2.8%
Quebec	2.8%
New Brunswick	3.7%
Nova Scotia	-7.6%
Prince Edward Island	4.1%
Newfoundland & Labrador	-25.4%

* Actual revenues (no adjustments made with respect to accounting or other changes); Public accounts basis. Numbers are based on reports from individual governments and, due to accounting and/or reporting differences, are not strictly comparable between provinces.

FAMA Members: Total Units Booked by Quarter

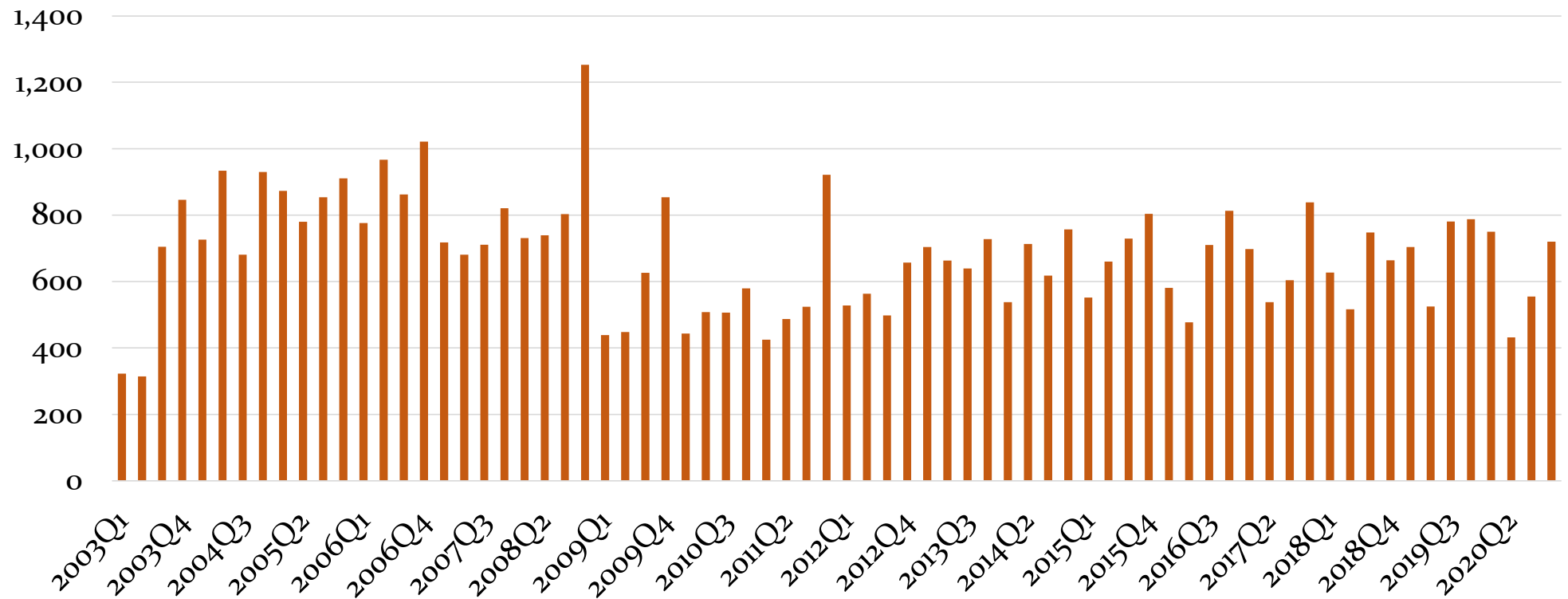
2003Q1 – 2020Q4

Units Booked



FAMA Members: Pumpers Booked by Quarter

2003Q1 – 2020Q4



- Pumpers represent the majority of sales, historically around 57% of all units booked.

FAMA Members: Units Booked by Vehicle Class

2019 v. 2020

Vehicle Class	Units Booked		2019 v. 2020	
	2019	2020	Net	%
Pumpers	2,798	2,456	-342	-12.2%
Walk-In Rescue	88	65	-23	-26.1%
Non-Walk In Rescue	228	179	-49	-21.5%
Rectangular and Elliptical Tanker Sales	551	499	-52	-9.4%
Aerial	662	604	-58	-8.8%
Airport Rescue and Fire Fighting (ARFF)	196	150	-46	-23.5%
Major Refurbishment	84	54	-30	-35.7%
Brush Trucks	278	280	2	0.7%
Total Units Booked	4,885	4,287	-598	-12.2%

FAMA Member Survey: Issues of Concern

- In late 2020/early 2021, FAMA surveyed its member companies regarding an array of issues ranging from factory utilization to marketing strategies;
- *Funding/budgets* and *overall economic conditions/general sales declines* are the issues of most concern to member companies;
- There are also concerns regarding growing costs.

Issue	1: This doesn't impact our business 5: Keeps me up at night			
	Rated 1-2	Rated 3	Rated 4-5	Total
Funding/budgets	10.4%	18.2%	71.4%	100%
Overall economic conditions/general sales declines	9.1%	28.6%	62.3%	100%
Cost of raw materials	14.3%	36.4%	49.4%	100%
Health care costs	31.2%	23.4%	45.5%	100%
State/local revenues	46.8%	16.9%	36.4%	100%
Federal regulation	33.8%	31.2%	35.1%	100%
Product liability and litigation	45.5%	35.1%	19.5%	100%
Housing market	46.8%	36.4%	16.9%	100%
Energy costs	42.9%	41.6%	15.6%	100%

As the World Turns

FAMA Member Survey: 6-Month Outlook

- Based on questions posed to FAMA members regarding orders, sales, and sales price expectations, Sage economists computed the new **FAMA Confidence Index (FCI)**, which measures member companies' outlook for the next six months;
- A reading above 50 indicates an expectation of expansion;
- The first FCI reads: 54.9 for orders, 55.2 for sales, and 66.2 for sales prices;
- More FAMA members expect orders to increase than decrease (44% expect orders/sales to increase; 27-28% expect orders/sales to decrease).

FAMA Member Confidence Index			
	Orders	Sales	Sales Prices
Index Reading			
	54.9	55.2	66.2
Expectations			
Increase Significantly	7.8%	6.5%	7.8%
Increase Slightly	36.4%	37.7%	55.8%
No Change	27.3%	28.6%	31.2%
Decrease Slightly	24.7%	24.7%	3.9%
Decrease Significantly	3.9%	2.6%	1.3%

The Bold and the Beautiful

FAMA Member Survey: 3-Year Outlook—Capital Investment

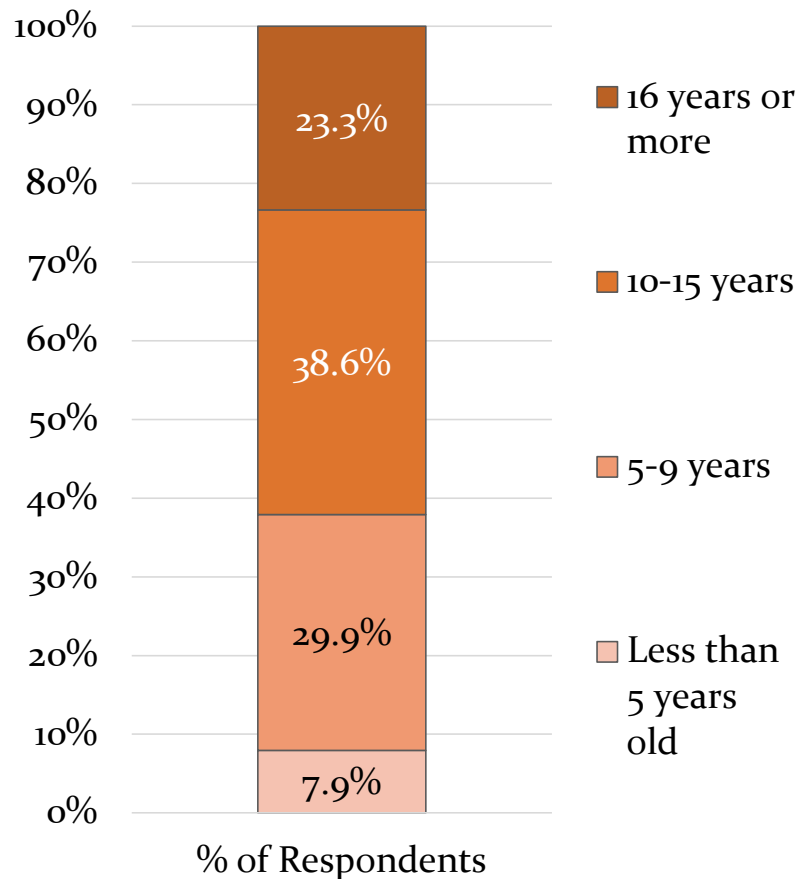
- Only 1.3% of responding member companies think that capital investment will decline;
- Approximately 25% expect capital investment to be unchanged;
- That means that nearly 75% expect capital investment to increase over the 3-year forecast horizon;
 - More than 44% expect capital investment to increase modestly (by 1-10%);
 - 21% expect it to increase by 11-20%;
 - 9% expect it will increase substantially (by more than 20%).

FAMA Member Survey: 3-Year Outlook—Employment

- More than 80% of responding FAMA member companies expect their employment levels to increase;
 - 58% think it will increase by 1-10%;
 - 23% think it will increase by more than 10%;
- 13% think employment levels won't change;
- Only 5% think employment will decline in the next three years.

FAMA Industry Outlook Survey:

Age of Front-Line Apparatus & Replacement Plans



- More than 60% of responding departments report having apparatus that is at least 10 years old, and 23% report that their department's apparatus is at least 16 years old.
- Asked whether their fire department maintains a formal or written apparatus replacement plan or process, only 43% indicated "yes".

Looking for Explanatory Factors:



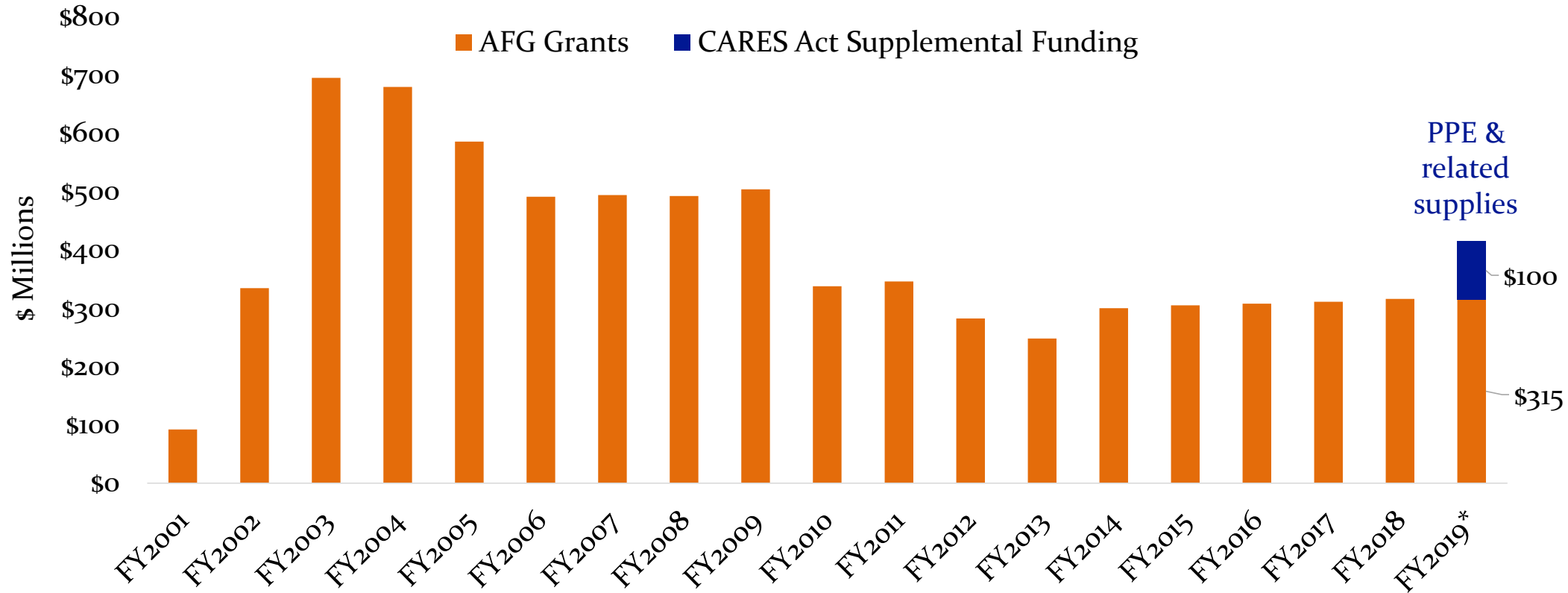
Federal Funding

- Assistance to Firefighters Grants (AFG) program funding targets “critically needed resources to equip and train emergency personnel to recognized standards, enhance operations efficiencies, foster interoperability, and support community resilience.”
- The amount of AFG grants distributed has shrunk dramatically since FY2009. That year, grants totaled more than **\$500 million**. By FY2018, grant funding stood at around **\$316 million**.
- Even before FY2009, there had been a decline in funding. In FY2003, which came shortly on the heels of 9/11, AFG grant funding approached \$700 million.
- During the FY2019 AFG program year*, authorized funding was \$415 million. However, \$100 million of that tally took the form of additional, emergency AFG grants authorized under the CARES Act.
- For the FY2020 AFG program year, funding has been authorized at **\$319.5 million**, similar to 2015-2018 authorization levels.

*Note: Grant awards made in calendar year 2020 refer back to the FY2019 grant program.

Firefighter Assistance: FEMA AFG Grants

FY2001-FY2019



*FY2019 figures are preliminary; CARES Act supplemental funds were designated for the purchase of personal protective equipment (PPE) and related supplies.

Source: 1. Sage; 2. Fema.gov; 3. Congressional Research Service, "Assistance to Firefighters Program: Distribution of Fire Grant Funding". Author: Lennard G. Kruger, Specialist in Science and Technology Policy. Notes: AFG: Assistance to Firefighters Grants.

Construction: Trends in Community Fire Protection Spending



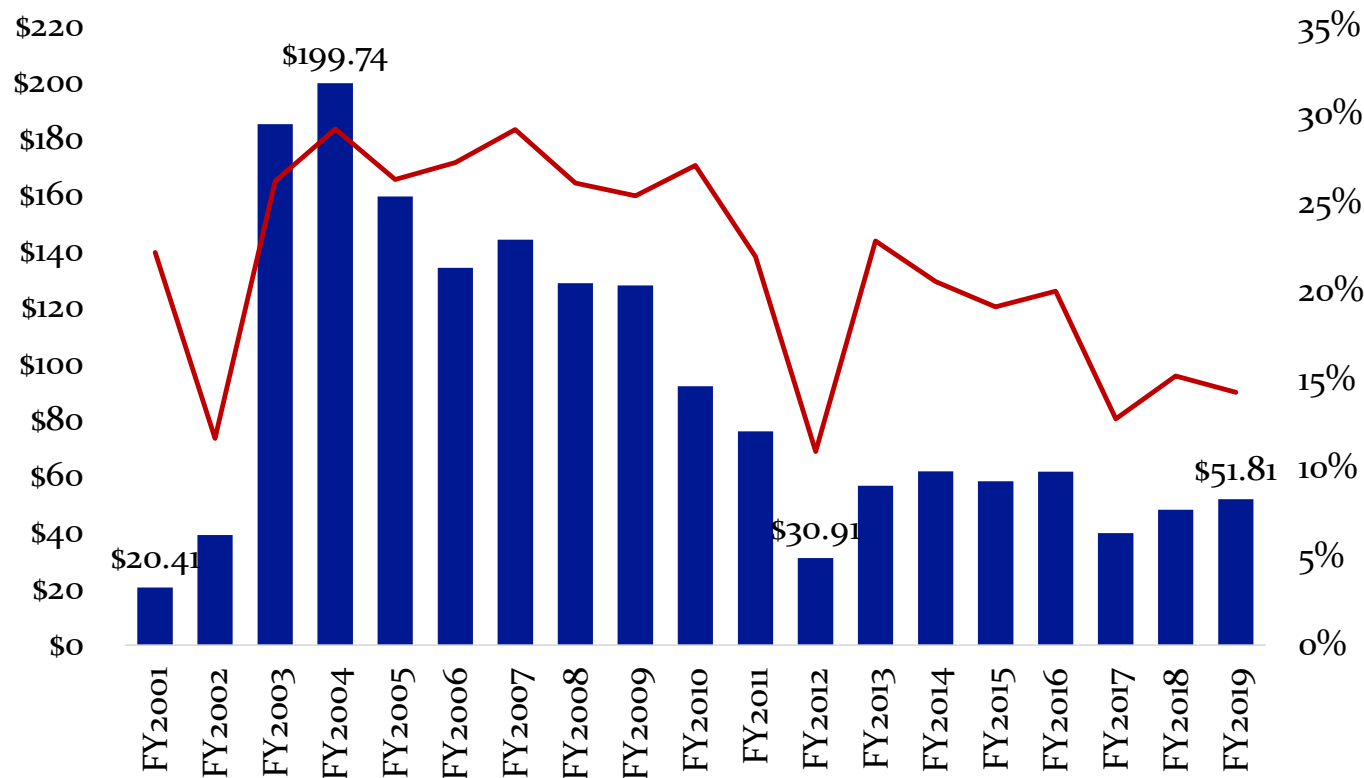
- In 2020, construction spending on fire/rescue surged as governments began to take response times and capacity to respond more seriously.
- State and local construction spending in the fire/rescue category totaled \$2.65 billion in 2020.
- This was the highest level in the history of the data series and 7% higher than the previous peak level of spending recorded in 2009, when state/local construction spending in this category approached \$2.5 billion. Since hitting a cyclical nadir in 2013, spending in this category has grown 89%.

Source: 1. Sage; 2. U.S. Census Bureau; 3. Urban Institute-Brookings Institution Tax Policy Center. State & Local Government Finance Data Query System. Data from U.S. Census Bureau, Annual Survey of State and Local Government Finances.

Ok, but Not Apparatus—Distribution of AFG Awards for Vehicle Acquisition, FY2001-FY2019

AFG Grants for Vehicle Acquisition (\$M)

% of Total AFG Grants



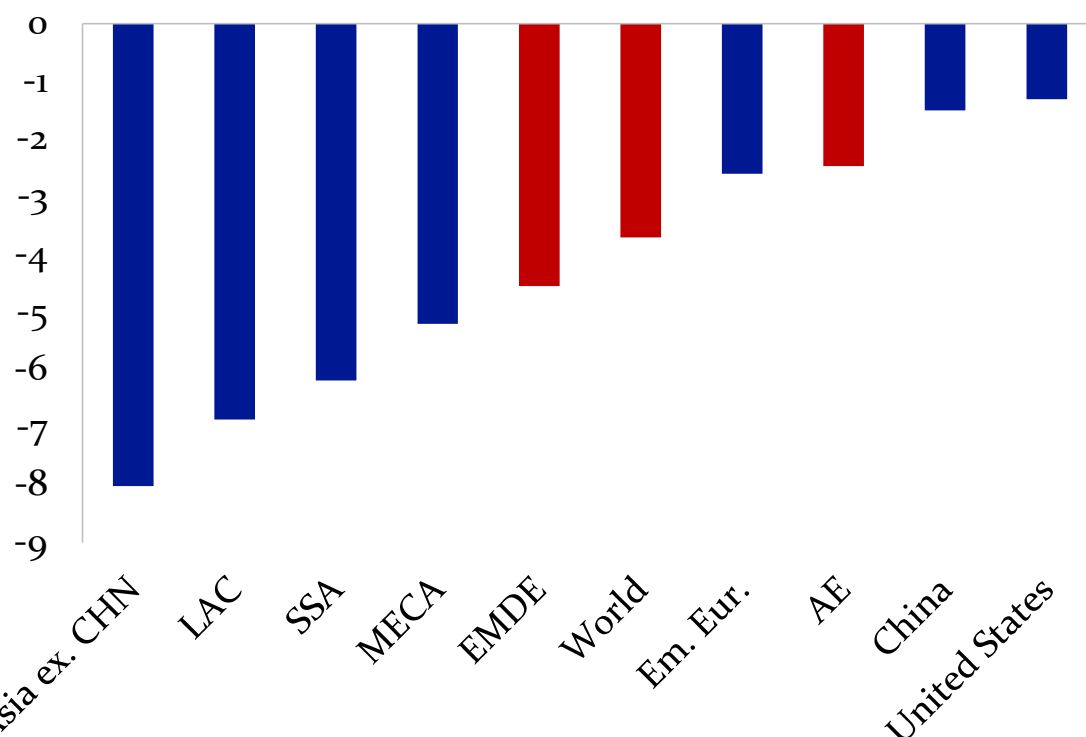
- AFG funds for the replacement of sub-standard or unsafe vehicles are in high demand.
- From FY2014-FY2016, funds for vehicles represented around 44% of total funds requested by applicants.
- However, no more than 25% of available AFG grant funds may be used by recipients for the purchase of vehicles and 10% of that amount is set aside for ambulances.

Guiding Light: Economic & Industry Outlook



GDP Losses in 2022 Relative to Pre-COVID Forecasts by Region

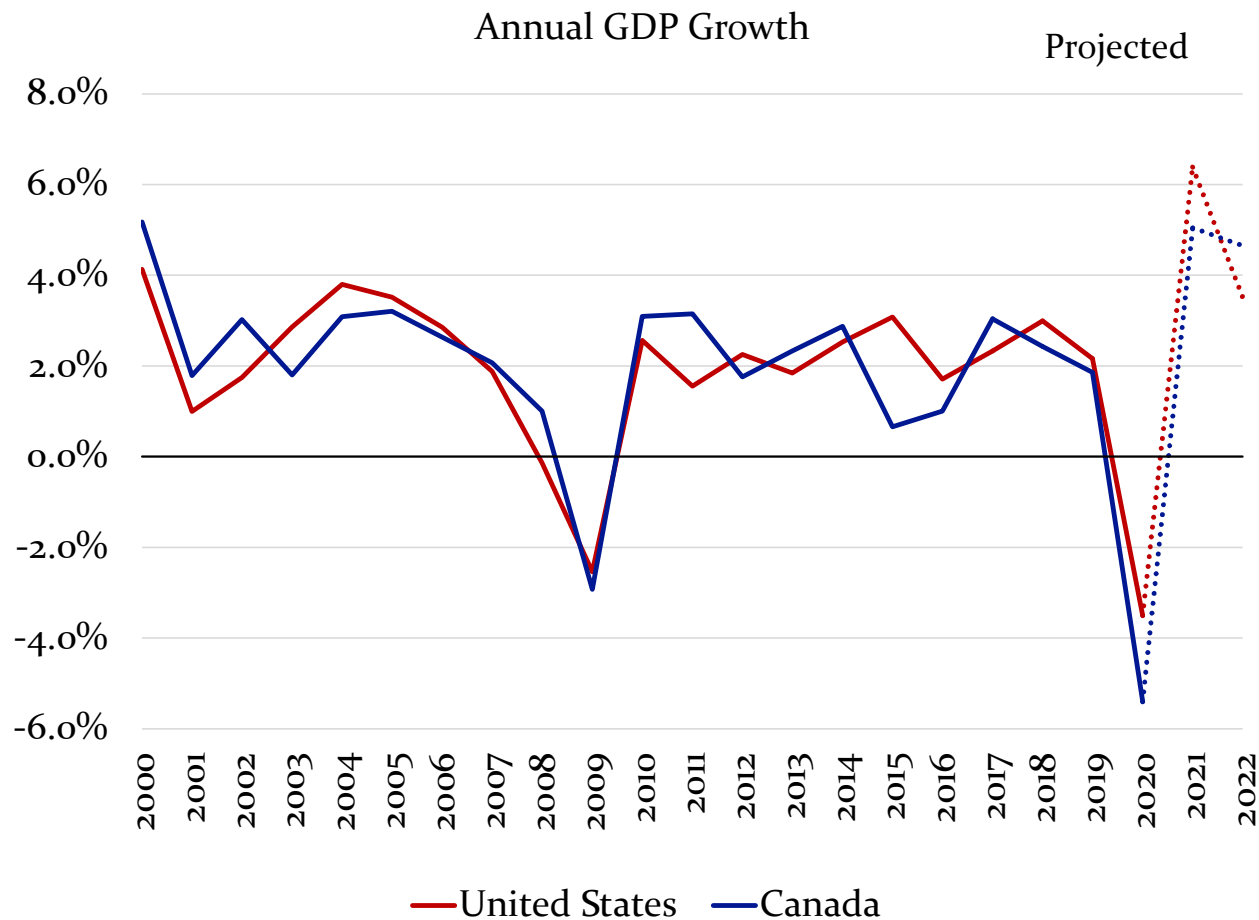
Projected 2022 GDP level relative to pre-COVID IMF Forecast, % difference



- Globally, economic activity will remain below pre-pandemic expectations for several years.
- The strength of the anticipated recovery varies across countries and regions depending on several factors:
 - the severity of the health crisis;
 - the extent of domestic disruptions to activity;
 - the exposure to cross-border spillovers;
 - the effectiveness of public policy support to limit continuing damage.

Source: 1. Sage. 2. International Monetary Fund, World Economic Outlook Update, January 2021. Notes: Em. Asia ex. CHN = emerging and developing Asia excluding China. LAC = Latin America and the Caribbean. SSA = sub-Saharan Africa. MECA = Middle East and Central Asia. EMDE = emerging market and developing economies. Em. Eur. = emerging and developing Europe. AE = Advanced Economies.

IMF Projections: GDP Growth in the U.S. and Canada



- The IMF's most recent forecasts predict that the U.S. economy will expand sharply in 2021 (6.4%) before slowing to 3.5% growth in 2022.
- Canada's economy is expected to grow 5.0% in 2021 and 4.7% in 2022.

Reasons for Apparatus Manufacturer Optimism I

- Wildfires and pandemic have created greater perceptions of danger, inducing more policymakers to think carefully about emergency response capability and capacity;
- The surge in homebuilding in many American and Canadian suburbs stands to expand many local tax bases while increasing demand for apparatus;
- While many commercial real estate segments are characterized by large-scale vacancy and decreasing values, other segments are emerging to fill the economic and fiscal void, including data and fulfillment centers...

Reasons for Apparatus Manufacturer Optimism II

- The Biden administration recently passed a \$1.9 trillion stimulus package, which includes \$350 billion to support state and local government finances;
- Possible additional economic stimulus, including in the form of stepped-up federal infrastructure outlays (\$2 trillion proposed);
- The lack of substantial order growth in prior periods implies a build-up in highly depreciated assets, setting the stage for a more forceful equipment replacement cycle during the years ahead.

In Summation I ...

- 2020 was a lousy year, with total units booked down 12.2% compared to 2019.
- However, it may be that this was simply due to the chaos unleashed by pandemic and that there is now an abundance of pent-up demand for apparatus that will become apparent during the months and years to come.
- The latest industry survey data indicate that more than 80% of responding member companies expect their employment levels to increase and 75% expect capital investment to rise over the next 3 years.
- Even in the short-term, more FAMA members expect orders and sales to increase in the next 6 months than expect them to decrease (44% expect orders/sales to increase; 27-28% expect orders/sales to decrease).

... In Summation II

- The industry's outlook has been rapidly brightening for three primary reasons:
 - The economy has recovered faster than many anticipated;
 - Many state governments did not suffer as much revenue loss in 2020 as expected;
 - Massive federal stimulus, including an expected infrastructure package, should result in rapid recovery in units sold – in other words, the past will not be prologue – if Susan Lucci can win an Emmy, then all is possible.

Thank You

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