

Green Chemistry Market Research: Promising Signals for the Availability of Safe and Sustainable Alternatives

Tuesday, March 1 2022
12:00 PM - 1:00 PM ET

TOPICS IN ALTERNATIVES ASSESSMENT

Free Webinar Series Hosted by the Association
for the Advancement of Alternatives Assessment



**GREEN CHEMISTRY &
COMMERCE COUNCIL**
Business Mainstreaming Green Chemistry

WELCOME!



Today's facilitators

Today's webinar – co-hosted by A4 and the GC3: ***Green Chemistry Market Research: Promising Signals for the Availability of Safe and Sustainable Alternatives***

Primary Goal:

- To learn about this important economic research and its implications for investor and business communities as well as policy initiatives in the US, EU and beyond



Joel Tickner, A4 Ex Director
GC3 Founder/Director



Lauren Heine
Co-Chair, A4 Program Committee

Today's Speakers



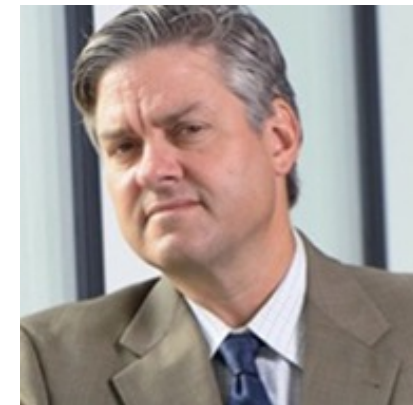
JAY GOLDEN

Inaugural Pontarelli Professor of
Environmental Sustainability & Finance,
**Syracuse University's Maxwell School
of Citizenship and Public Affairs**



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Senior Scholar of Marketing and
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ROBERT HANDFIELD

Executive Director, Supply Chain Resource
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Webinar Logistics



- Due to the number of participants on the webinar, all lines will be muted
- If you wish to ask a question, please type your question in the Q&A box located in the drop-down control panel at the top of the screen
- Questions will be answered at the end of the panel discussion
- The webinar is being recorded and will be posted the A4 and GC'3's websites www.saferalternatives.org; <https://greenchemistryandcommerce.org/>

Green Chemistry

A Strong Driver of Innovation, Growth,
and Business Opportunity

SEPTEMBER 2021

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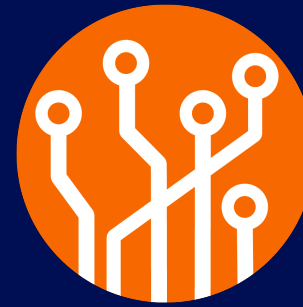
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DYNAMIC SUSTAINABILITY LAB™
AT SYRACUSE UNIVERSITY

Major Findings & Recent Movements

Dr. Jay Golden

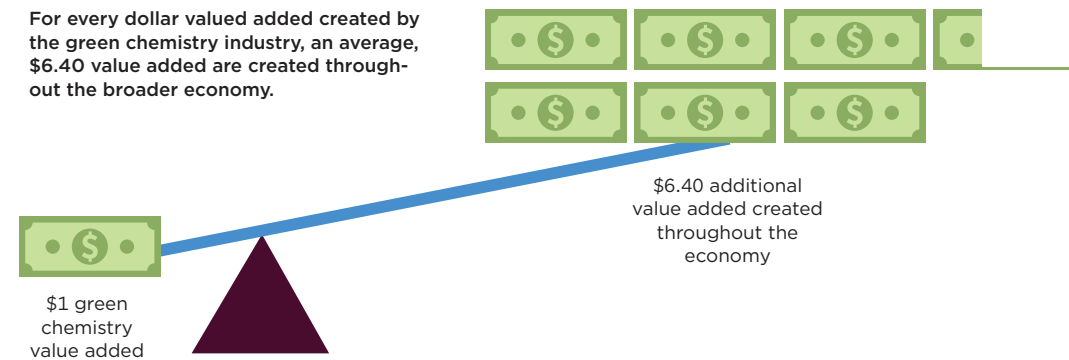
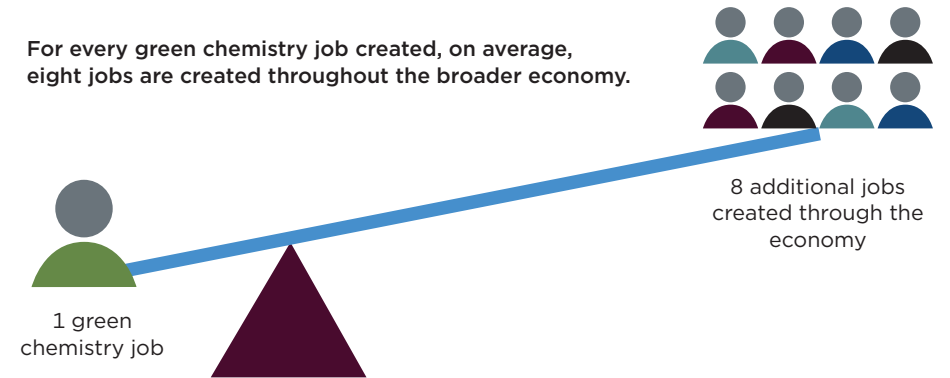
Pontarelli Professor of Environmental Sustainability & Finance
Director, Dynamic Sustainability Lab

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Five insights from our study

1. Green chemistry marketed products **significantly outperform their conventional counter-parts** in consumer markets
2. **Consumers and institutional buyers are driving demand** for green chemistry products
3. Emerging **government policies and investor expectations** are fueling growth of the green chemistry sector
4. The green chemistry sector will become a strong **driver for job and economic growth**
5. In response to increasing demands for more sustainable product portfolios, **sales, sourcing, and R&D** are working hand in hand to drive green chemistry solutions into the future product mix



Human & Environmental Health Will Continue to be a Driver

Issues such as toxic Organohalogen Flame Retardants (OFRs), Bisphenol A (BPA) and Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) will continue to drive safer chemicals in the marketplace



MIKE SCHADE / FEBRUARY 7, 2022

Great news: Best Buy restricts a class of toxic flame retardant chemicals in its Exclusive Brand TVs

Moving Forward:
It's now about
the markets



18 ORGANISATIONS

JOIN THE NET ZERO CARBON
BUILDINGS COMMITMENT



Walmart pledges net zero emissions by 2040 PREMIUM

Published: 11 October 2021

Written by Simon Glover

[Print](#)



Industry Pull

At least one fifth (21%) of the world's 2,000 largest public companies have committed to meet net zero targets (Forbes, 2022). The companies together represent sales of nearly \$14 trillion.

According to data released in 2021 by Bloomberg Green, 10,000 publicly listed companies alone are responsible for 40% of all climate warming emissions.

Morgan Stanley

Our Insights



Oil and natural gas have dominated chemicals manufacturing for decades. But as the world goes green, chemicals are returning to their bio-based roots. ⁹

Sustainable Chemistry Research and Development Act Passed as Part of National Defense Authorization Act

December 28, 2020, the House overrode President Trump's veto and passed the National Defense Authorization Act for Fiscal Year 2021 (H.R. 6395) by a vote of 322 to 87, and the Senate passed the bill on January 1, 2021, by a vote of 81 to 13.

Partnerships for Climate-Smart Commodities

\$1 Billion to finance pilot projects for US Ag and forestry products used in innovative ways – GHG focus.

45Q Program

The Internal Revenue Code offers a tax credit that varies from just under \$12 to up to \$50 for each metric ton of carbon captured and sequestered. Proposals to raise to \$175/ton

\$1.2 Trillion Infrastructure Investment and Jobs Act Bill

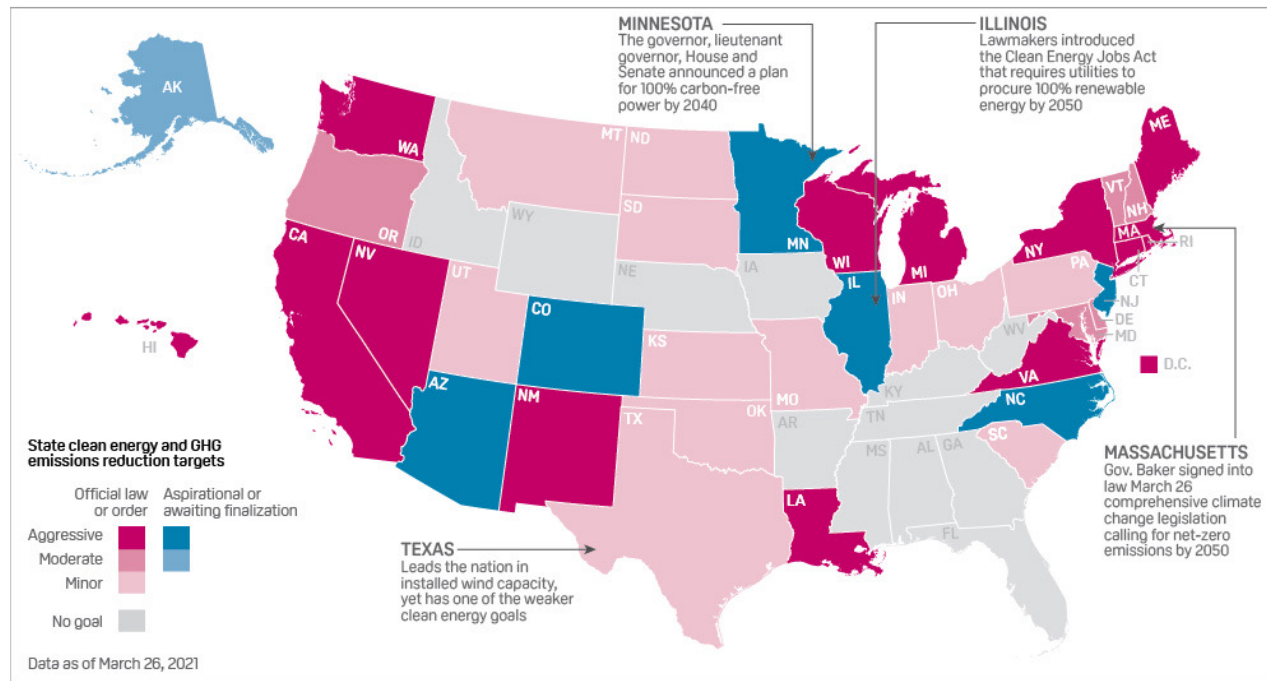
- \$10B for PFAS and Other Contaminants
- \$8B for Hydrogen
- \$6B for Carbon Capture

New York State

Climate Leadership & Community Protection Act

Reduce economy-wide greenhouse gas emissions 40 percent by 2030 and no less than 85 percent by 2050 from 1990 levels.

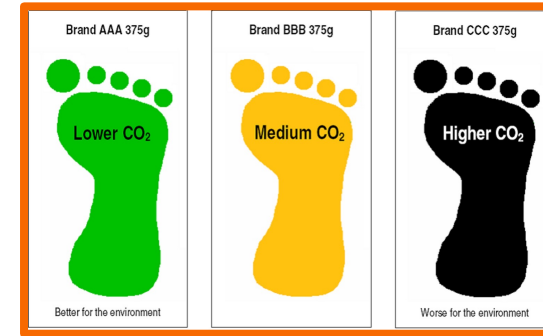
- AF20. Develop a Sustainable Biomass Feedstock Action Plan and Expand the Use of Bioenergy Products
- AF21. Increase Market Access for New York Low-Carbon Products
- AF22. Provide Financial and Technical Assistance for Low-Carbon Product Development
- AF23. Advance Bio-Based Products Research Development and Demonstration
- AF24. Advance Deployment of Net Negative CO2 Removal



Source: S&P Global Platts, National Conference of State Legislatures, ERCOT, Cal-ISO, other associated sources for individual states and territories

**May 12-13 Workshop in
Syracuse, New York**

Verification + Carbon Intensity Labelling



- Expressed interest by industry as part of their Net-Zero Carbon commitments
- Research underway - ASTM, AFCC +others
- Possibly in connection with existing govt label
- Survey to be issued in very near term by Syracuse Univ
- Seeking nominations for initial working group?

Sustainable Market Share Index™

RANDI KRONTHAL-SACCO



CSB Sustainable Market Share Index: Research Question 4

Research Question: How are green chemistry products faring vs. conventional formulations in the U.S.?



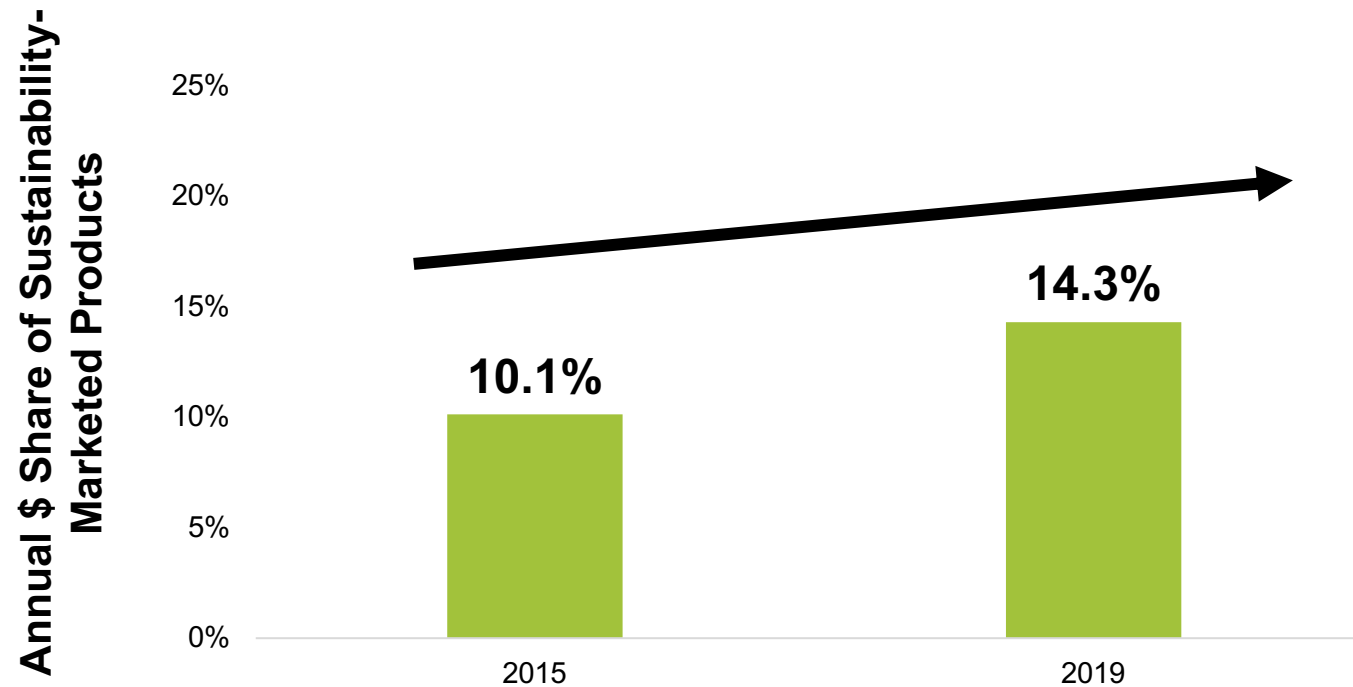
Green Chemistry and Commerce Council: Methodology

- Utilized IRI Point of Sale (POS) database
- Data on all scanned packaged goods purchases in all in-store U.S. outlets in measured channels including Food, Drug, Mass Merchandisers, Dollar and Convenience Stores
- Examined categories that include green chemistry formulations:
 - **10** categories: auto wax, dish detergent, floor cleaner, household cleaner, laundry detergent, pavement deicing, pool chemicals, skincare, soap, suntan
 - 5 years: January 2015 through December 2020
- Identified all SKUs for each category marketed as sustainable with on-package communication (e.g., EPA Safer Choice, plant-based, no-phthalates)



GC3: Market Share 2015-2019

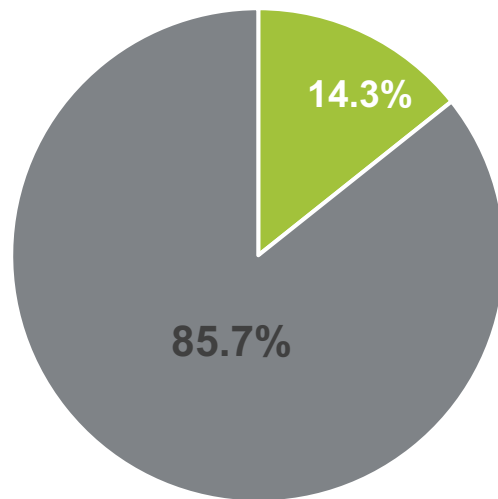
Across 10 categories studied, green chemistry-marketed products account for 14.3% share of market (\$) in 2019, up from 10.1% in 2015.



GC3: Contribution to Growth 2015-2019

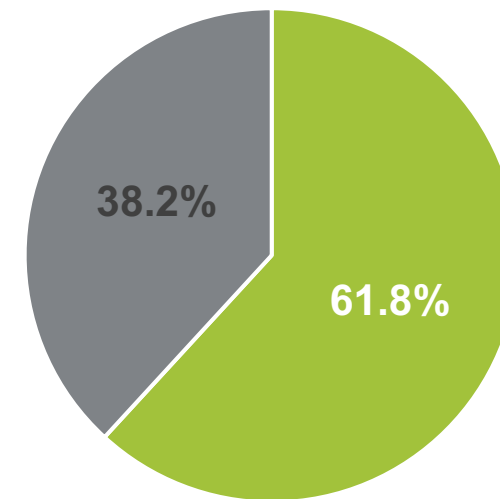
Green Chemistry-marketed products are 14.3%* of the market and delivered 62% of the categories market growth (2015-2019).

\$ Share of Market
(2019)



- Sustainability-marketed products
- Conventionally-marketed products

\$ Share of Market Growth
(2015-2019)



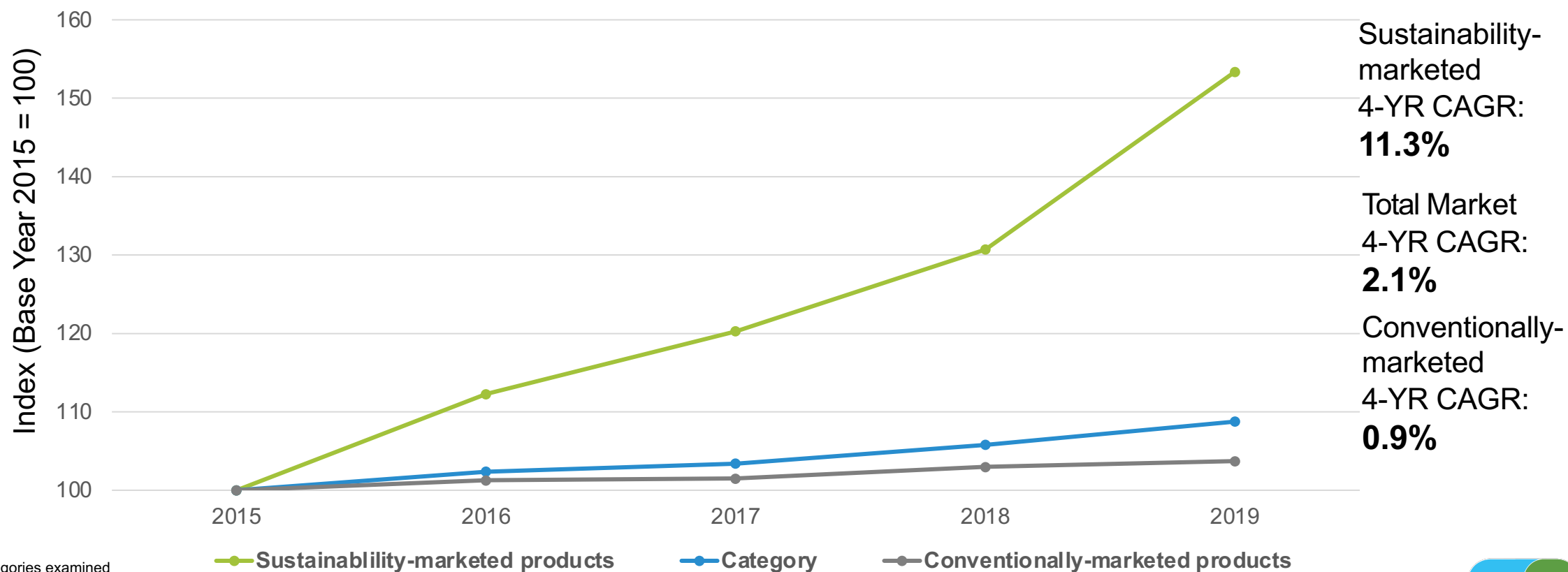
- Sustainability-marketed products
- Conventionally-marketed products

*10 categories examined



GC3: Growth Rate 2015-2019

From 2015-2019, Green Chemistry-marketed products* grew 12.6 times faster than their conventional counterparts, and 5.4 times faster than the market.



*10 categories examined

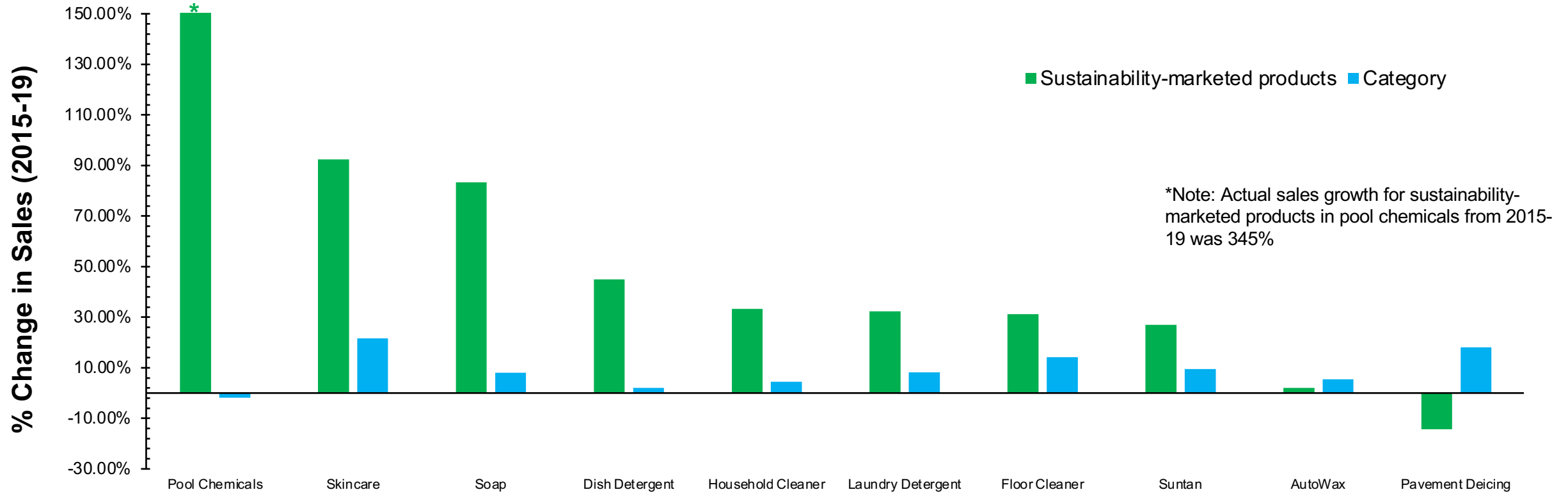


NYU STERN

Center for Sustainable Business

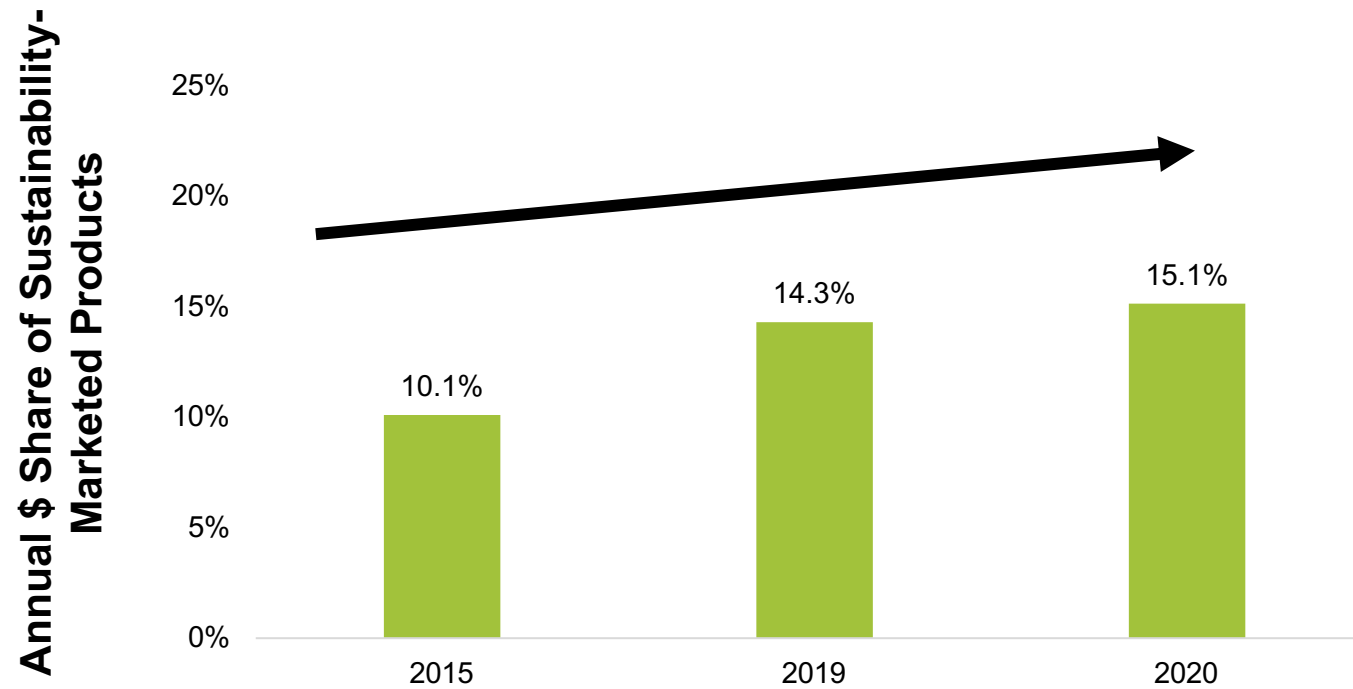
GC3: Growth by Category

In 8 out of 10 categories researched, the growth of sustainability-marketed products outpaced the growth of their respective categories.



GC3: Market Share 2020

Green Chemistry-marketed products* continue to climb in 2020, despite the pandemic



*10 categories examined



GC3: Top Sustainable Messages by Category

Claim	Share of Average Annual Dollar Sales of Sustainability-Marketed Products 2015-2019
Pool Chemicals	
Organic	55%
Non-Toxic	55%
Soap	
Phthalate Free	68%
Paraben Free	63%
Skincare	
Paraben Free	61%
Phthalate Free	54%
Household Cleaner	
Plant Based	29%
Biodegradable	23%
Floor Cleaner	
Plant Based	22%
Natural	22%

Claim	Share of Average Annual Dollar Sales of Sustainability-Marketed Products 2015-2019
Dish Detergent	
USDA Bio Based	31%
Biodegradable	25%
Laundry Detergent	
Plant Based	86%
USDA Bio Based	44%
Suntan	
PABA Free	46%
Reef Friendly & Safe	45%
Auto Wax	
Silicone Free	97%
Petroleum Distillates	97%
Pavement Deicing	
Salt	81%
Natural	36%

Green chemistry products: A deeper dive on the economic modeling and interviews with industry

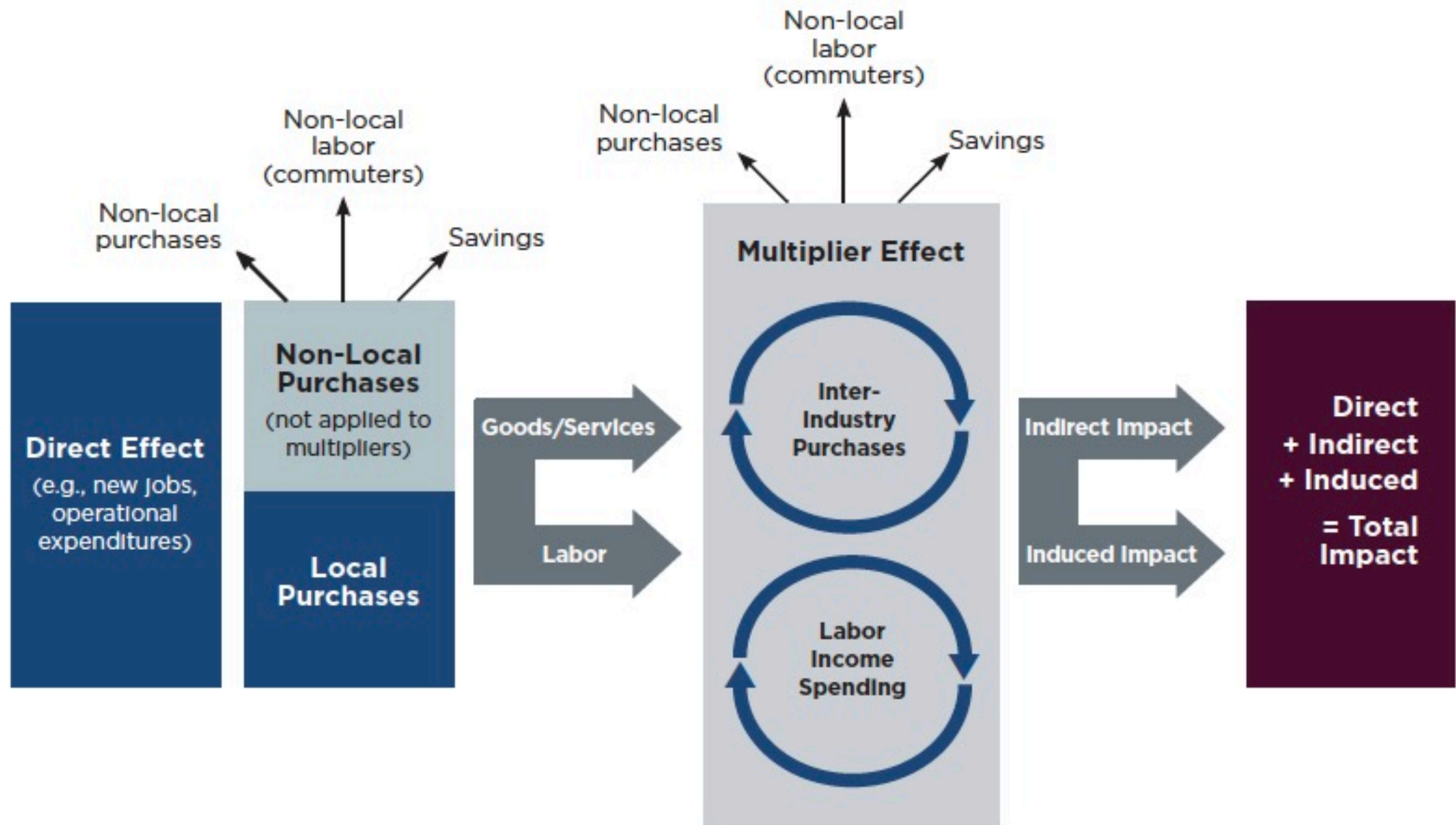
ROBERT HANDFIELD

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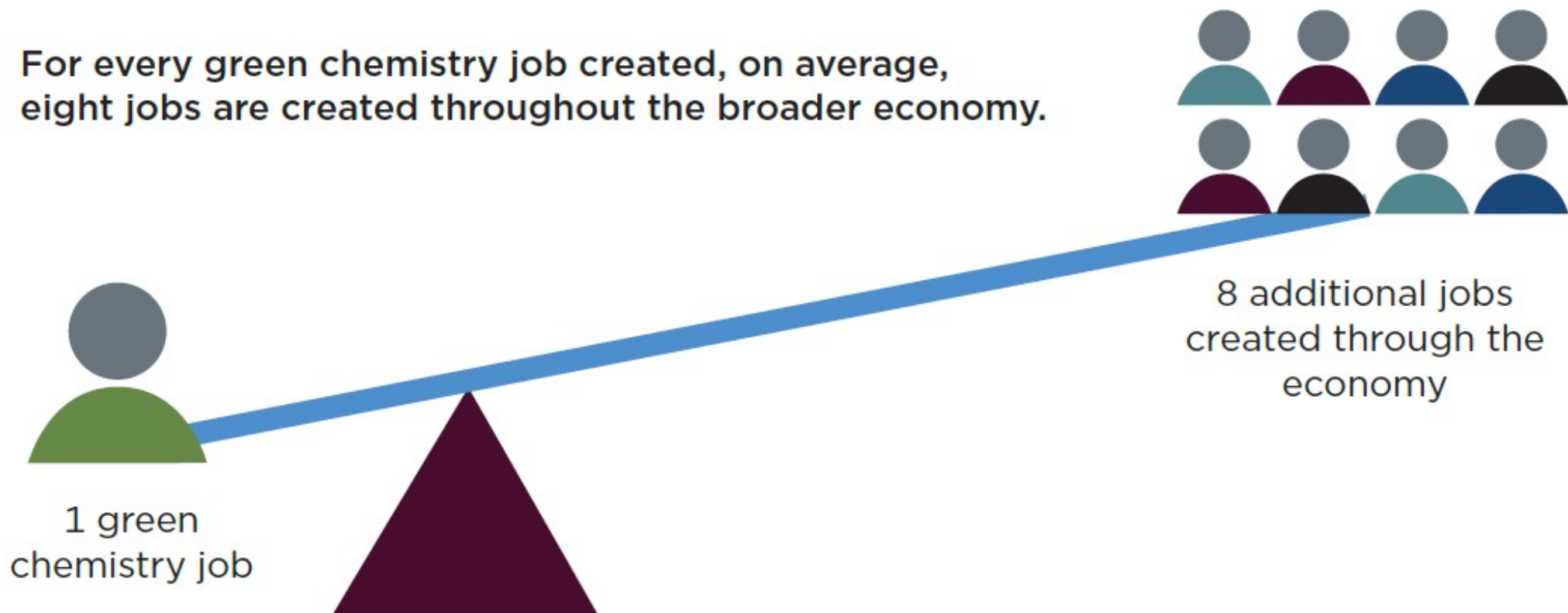
NC State's Poole College of Management

NC STATE Poole College of Management

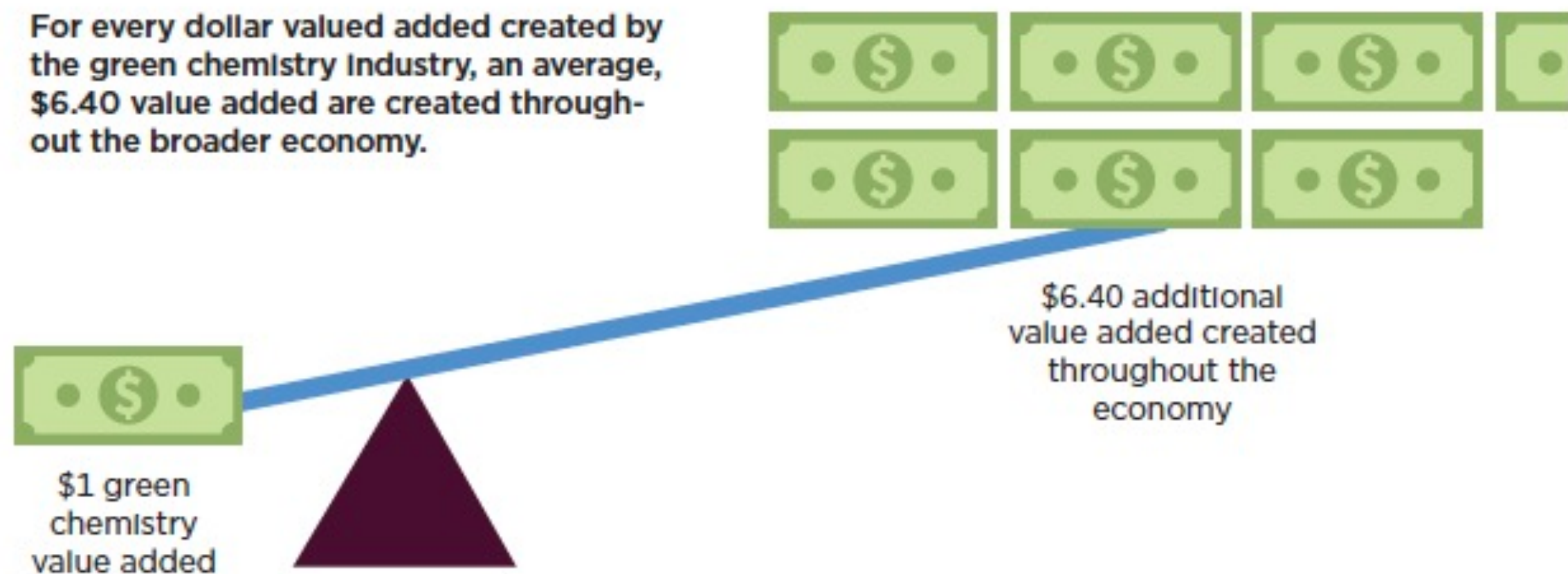
Supply Chain Resource Cooperative



For every green chemistry job created, on average,
eight jobs are created throughout the broader economy.



For every dollar valued added created by the green chemistry industry, an average, \$6.40 value added are created throughout the broader economy.



4.6 million

The number of people
employed in the U.S. blobased
products Industry in 2017



\$470 billion

Value added contribution
to the U.S. economy from the
U.S. blobased products
Industry in 2017

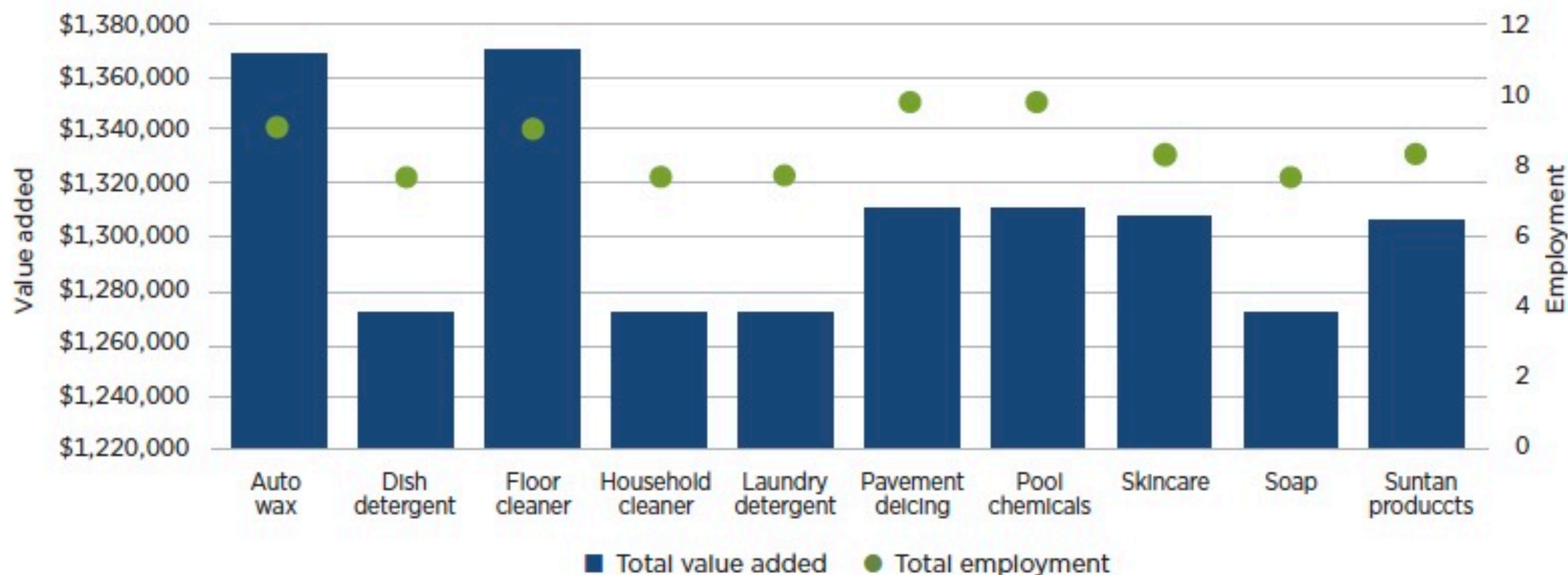


2.79

The jobs multiplier for every
1 blobased products Industry
job, 1.79 additional jobs
are supported in the U.S.

FIGURE 4.5

Economic impacts per million-dollar output for retail data.



Case Studies



**Apple's Green Chemistry
Leadership Role**

BEAUTYCOUNTER™

**Beautycounter:
1,800 on The “Never” List and Counting...**



**Exploring New Biobased Feedstocks
in a Sustainable Products Future**



CHECKERSPOT

Checkerspot and WNDR Alpine



**Lowe's Home Improvement:
Putting Green Products In The Home**



**Nike's Chemistry Center of Excellence:
Innovating the Chemical Supply Chain**



The Green Premium in Consumer Products



**Trillium Investments:
Putting Money Where the Mouth Is**



**VF Corporation and the Application
of Chem-IQsm in the Supply Chain**

Panel Discussion Q&A

You're invited to the 2022 GC3 Virtual Roundtable!



GC3 Virtual Roundtable

March 7-10, 2022

To view full agenda, speaker bios, and register, please visit:

www.greenchemistryandcommerce.org





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ASSESSMENT

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the science, practice, and policy of
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collaboratively to accelerate
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materials, processes, and products

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THANK YOU