

TO: Education, Personnel, and Student Life Committee
Megan Cluver, Chair
Karen Luneau, Vice Chair
Janette Bombardier
David Durfee
Shirley Jefferson
Mary Moran
Perry Ragouzis



FROM: Yasmine Ziesler, Chief Academic Officer

RE: EPSL Meeting on October 27, 2022

DATE: October 21, 2022

The EPSL Committee of the Board of Trustees is scheduled to meet on Thursday, October 27th from 1:00 to 2:30pm by Zoom.

In addition to brief updates on enrollment and academic program transformation, the two primary topics for this meeting are a focused look at the future of work and learning, with invited guest Mathew Barewicz from the Vermont Department of Labor, and an overview of CCV and VTSU's student populations and new work planned to support their success.

I can be reached directly at (802) 224-3025 if you have any questions.

Thank you.

Cc: VSC Board of Trustees
Council of Presidents
Chief Academic Officers
Student Affairs Council
HR Council

**Vermont State Colleges Board of Trustees
Education, Personnel, and Student Life Committee**

October 27, 2022

AGENDA

1. Call to order
2. Comments from the public
3. Approval of August 31, 2022 meeting minutes
4. Fall enrollment update
5. Vermont State University academic transformation progress update
6. Update on proposed revised approach to Policy 109
7. Discussion on the future of work and learning
 - Mathew Barewicz, Vermont Department of Labor
 - Student perspectives report from Trustee Ragouzis
8. Overview of Our Students and Supporting Their Success
 - Heather Weinstein, Dean of Strategic Initiatives and Student Affairs, CCV
 - Kelley Beckwith, Vice President for Student Success, VTSU
9. Other business

MATERIALS

1. Aug 31, 2022 minutes
2. Board Accountability Matrix with Fall 2022 Enrollment Update
3. Policy 109 Update
4. EMSI Article: The Demographic Drought

ITEM 1:
August 31, 2022 Minutes

**Minutes of the VSCS Board of Trustees' Education, Personnel, and Student Life
Committee meeting held Wednesday August 31, 2022 at 1:00 p.m. via Zoom -
UNAPPROVED**

Note: These are unapproved minutes, subject to amendment and/or approval at the subsequent meeting.

The VSCS Board of Trustees Education, Personnel, and Student Life Committee met on Wednesday, August 31, 2022 via Zoom.

Committee Members present: Megan Cluver (Chair), Janette Bombardier, David Durfee, Karen Luneau, Mary Moran, Perry Ragouzis

Absent: Shirley Jefferson

Other Trustees present: Lynn Dickinson

Presidents: Parwinder Grewal, Joyce Judy

Chancellor's Office Staff: Donny Bazluke, Network/Security Analyst
Kellie Campbell, Chief Information Officer
Wilson Garland, Director of Transformation
Pat Moulton, Executive Director, Workforce Development
Jen Porrier, Administrative Director
Sarah Potter, Chief Human Resources Officer
Sharron Scott, Chief Financial and Operating Officer
Patty Turley, General Counsel
Meg Walz, Director, Project Management
Sophie Zdatny, Chancellor
Yasmine Ziesler, Chief Academic Officer

From the Colleges: Nolan Atkins, Provost, Northern Vermont University and Vermont State University
Sarah Chambers, Coordinator of Instructional Technology, Castleton University
Ana Gaillat, Dean of Academic Affairs, Vermont Technical College
Hilary Linehan, Director of Athletics & Recreation, Vermont Technical College
Debby Stewart, Dean of Academic Affairs, Community College of Vermont
Beth Walsh, President, VSCUP, Northern Vermont University

1. Call to Order

Chair Cluver called the meeting to order at 1:01 p.m.

2. Approval of May 23, 2022 Meeting Minutes

Trustee Durfee moved and Trustee Moran seconded the motion to approve the May 23, 2022 meeting minutes. The motion was approved unanimously.

3. Public Comment

Beth Walsh expressed her pleasure at seeing the draft concept for faculty and staff liaisons to the EPSL committee agenda. She sees this as a great first step in the Board hearing more faculty and staff voices.

4. Student Trustee Update

Chair Cluver shared that going forward, a standing item on the EPSL agenda will be an update from the Student Trustee. Student Trustee Ragouzis provided an update based on his conversations with students at the campuses and his understanding of the feelings at the start of this new academic year. In speaking with his fellow students, he found excitement for the new website, new student life elements, new internship opportunities, new student leadership opportunities, the ability to attend new classes, and excitement to build back following COVID-19. He also heard concerns surrounding the lingering effects of COVID-19 on student leaders, the departure of and replacement of faculty and staff, and negativity of some students impacting the morale of other students. Trustee Ragouzis plans to meet with student leaders at each of the institutions. He reported that students are interested in hearing trustees explain why they decide to vote as they do. He has participated in Faculty Assembly meetings and seen how hard the faculty have been working and shared a thank you to faculty from students. Students have identified events at which they would welcome the opportunity to meet trustees. Trustee Ragouzis will provide the list, once compiled, and it will be shared with trustees.

5. Review of EPSL Committee plans and faculty and staff liaisons role for 2022-2023

Chair Cluver reviewed the draft plan for EPSL Committee work for 2022-2023 which can be found [here](#) on page 8. The draft plan includes monitoring Vermont State University program array work, including student, faculty, and staff perspectives in EPSL work, revising policies to align with the new system configuration, focusing on understanding student experiences at CCV and VTSU, and focusing on talent management in the system.

6. Review of anticipated academic policy revisions

Chief Academic Officer Yasmine Ziesler reviewed anticipated academic policy revisions. Her presentation can be found [here](#), with further information in the packet [here](#) on pages 13-25. Dr. Ziesler discussed the three policies and the changes recommended by the Chief Academic Officers. The revised policies will be brought forward at a future meeting for approval by the Committee. There will be additional policy changes, with the evolution of the VSC system. Dr.

Ziesler answered questions about the proposed revisions to VSC Policies 101, 102 and 109, assisted by Nolan Atkins, Provost of NVU and VTSU, and Debby Stewart, Dean of Academic Affairs for CCV.

7. Vermont State University academic transformation progress update

Provost Atkins provided a detailed progress update on the great deal of work that has occurred over the summer. Some highlights include the faculty's work to complete optimized curriculum details, the general education program and a draft governance model. Twenty-six programs are under review by curriculum committees, a Gen Ed proposal has been submitted for review by Faculty Assemblies, a common framework for graduate program review has been established, and revisions to high-credit "stacked" associates-to-bachelors programs will be finalized this fall. Unified academic policies for VTSU have been developed and reviewed and new scheduling software and catalog systems have been launched. The faculty in the F2F+ pilot participated in a series of workshops this summer and are now piloting a variety of strategies in their fall courses, including five faculty who are piloting a 1:1 device strategy with students.

8. Other Business

There was no other business.

Chair Cluver adjourned the meeting at 2:30 p.m.

ITEM 2:
Board Accountability Matrix with Fall 2022 Enrollment Update



Board of Trustees – Accountability Matrix

October 27, 2022 Update to EPSL

Affordability

Published Tuition / Net Cost of Attendance

Costs as Percent of Vermont Median Family Income

Student Loan Debt at Graduation – available October 2022

Published Tuition

What is the published tuition for Vermont State Colleges institutions?

Vermont State University	In State			Out-of-State		
	CU	NVU	VTC	CU	NVU	VTC
2022-2023 Tuition						
Undergraduate	11,832	11,592	14,712	28,800	25,680	28,128
Nursing (BSN, RN)	15,456		15,432	28,800		35,592
Dental Hygiene			18,432			28,824
Nursing LPN - 3 term			21,219			44,814
Para medicine - 3 term			21,219			44,814
Radiologic Science			26,464			52,960
Graduate	11,916	11,106	13,410	11,916	16,488	25,650

Community College of Vermont	In State	Out-of-State
Undergraduate	6,720	13,440



Net Cost of Attendance

What is the net cost of attendance for Vermonters at Vermont State Colleges institutions and how does that compare to Median Family Income?

Vermont Median Family Income: **63,477**

FY2022 Net Cost of Attendance	CCV		VTSU	
	Net Cost	% of Median	Net Cost	% of Median
General Undergraduate	6,657	10%	9,654	15%
Institute of Technology	-		12,590	20%
Nursing (AA, AS, BS, MS)	-		14,899	23%
Other Allied Health	-		17,961	28%
Graduate	-		12,566	20%
NVU-Online	-		9,741	15%
All Students	6,657	10%	11,554	18%



Accessibility

Enrollment by Student Type

Retention and Persistence

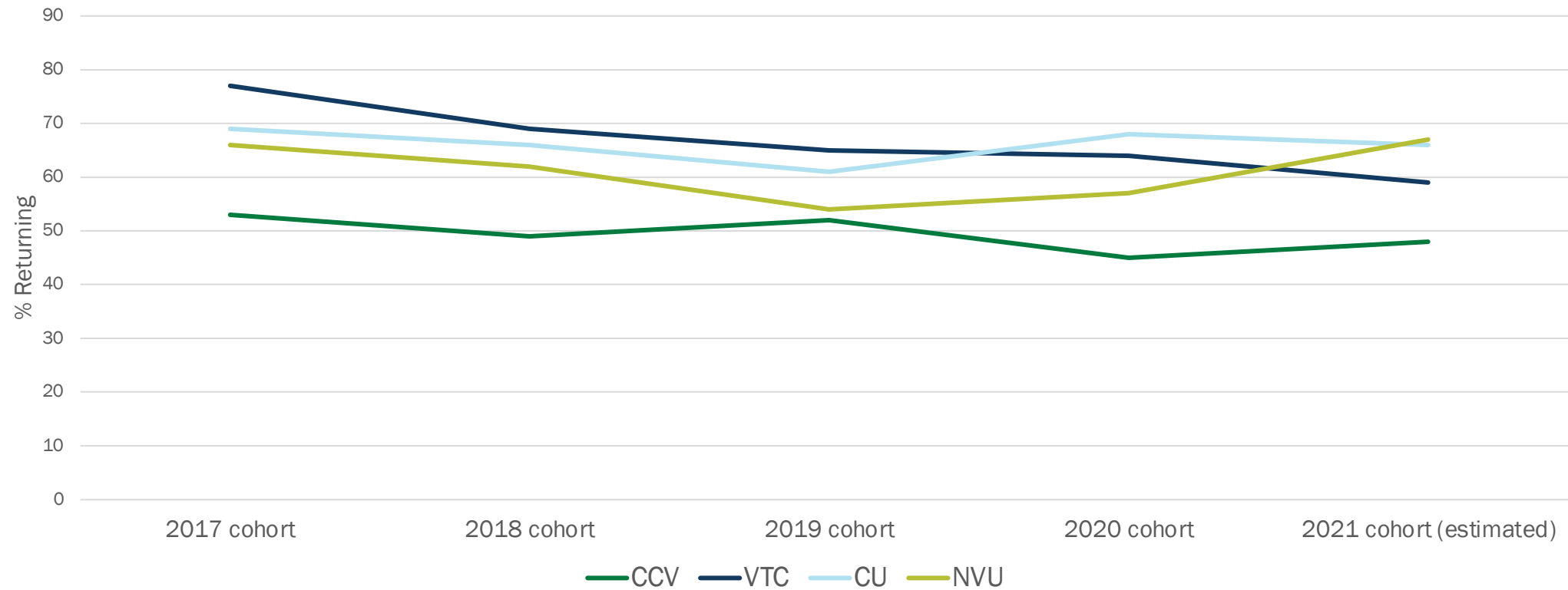
Graduation and Transfer

Headcount Enrollment Update: Fall 2022

	Fall 2019	Fall 2020	Fall 2021	Fall 2022
<u>CCV: Total Headcount</u>	5,104	5,102	5,541	5,594
Full-time	746	802	801	776
Part-time	4,358	4,300	4,740	4,818
Degree-seeking (certif. + 2yr)	3,232	3,169	3,754	
Non-degree-seeking	1,872	1,933	1,787	
<u>VTSU: Total Headcount</u>	6,477	5,728	5,565	5,554
Full-time	4,495	3,711	3,406	3,439
Part-time	1,982	2,017	2,159	2,115
Degree-seeking (certif., 2yr, 4yr)	5,093	4,386	4,117	
Graduate students	731	764	879	934
Non-degree-seeking	653	578	569	

Retention Update: Fall 2022

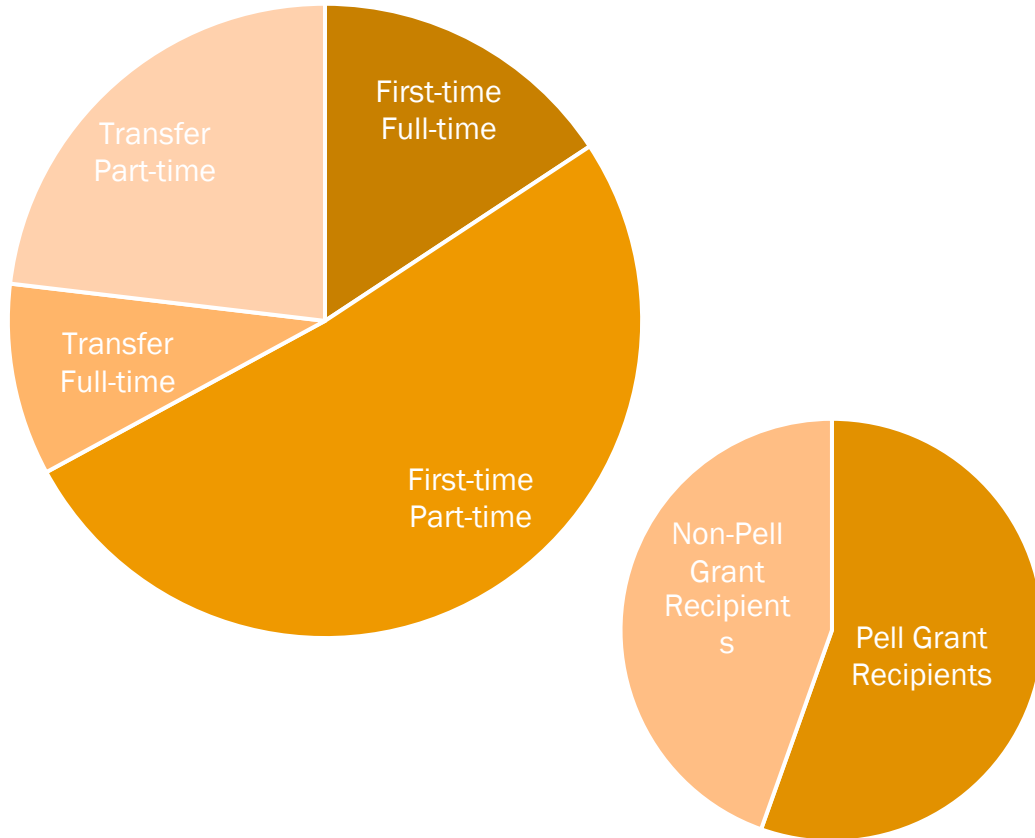
First-time Full-time Student Retention Rate



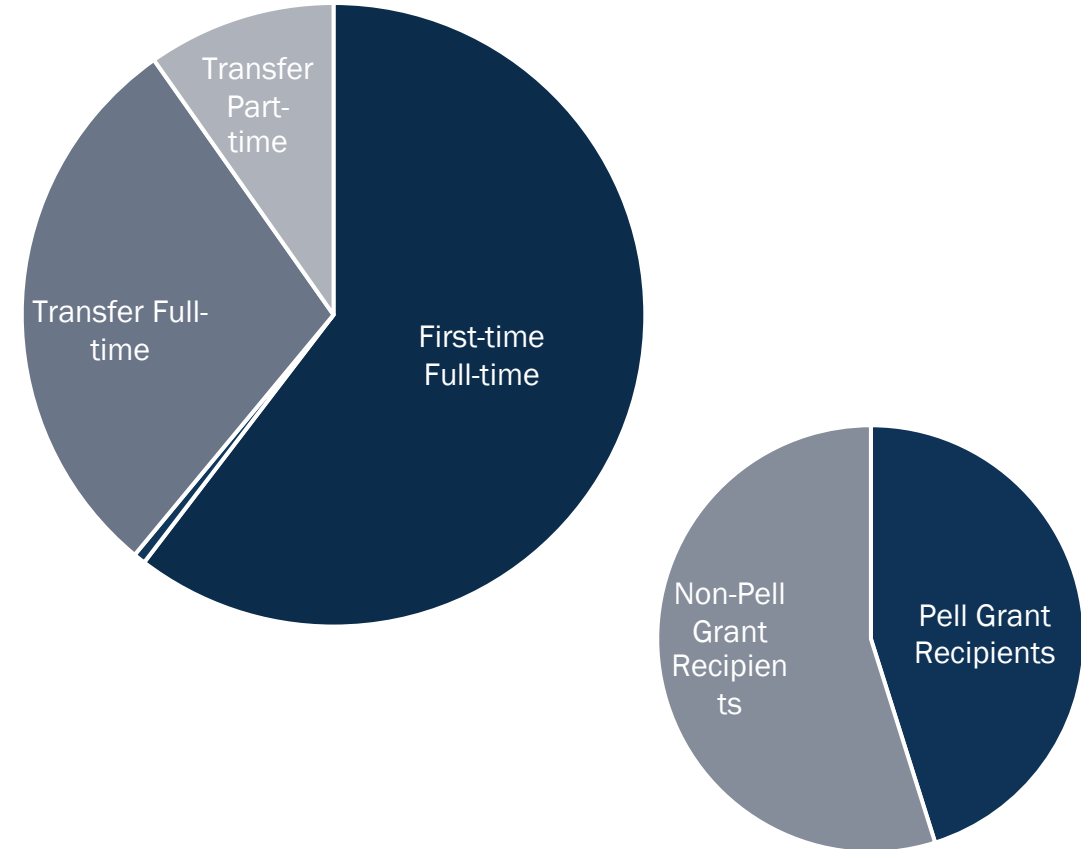
Source: IPEDS Fall Enrollment Survey

Enrollment by Student Type

Community College of Vermont



Vermont State University



Data represent entering cohort tracked for 8-year graduation/persistence through 2021 as reported to IPEDS.

Community College of Vermont

What proportion of incoming students are first time and transfer?

Please Note: Selecting "All" for Cohort Term displays data for ALL students enrolled in a single academic year, including both first-time and transfer students across fall, winter, spring, and summer terms.

2020-21 Cohort Total Enrollment

1,388

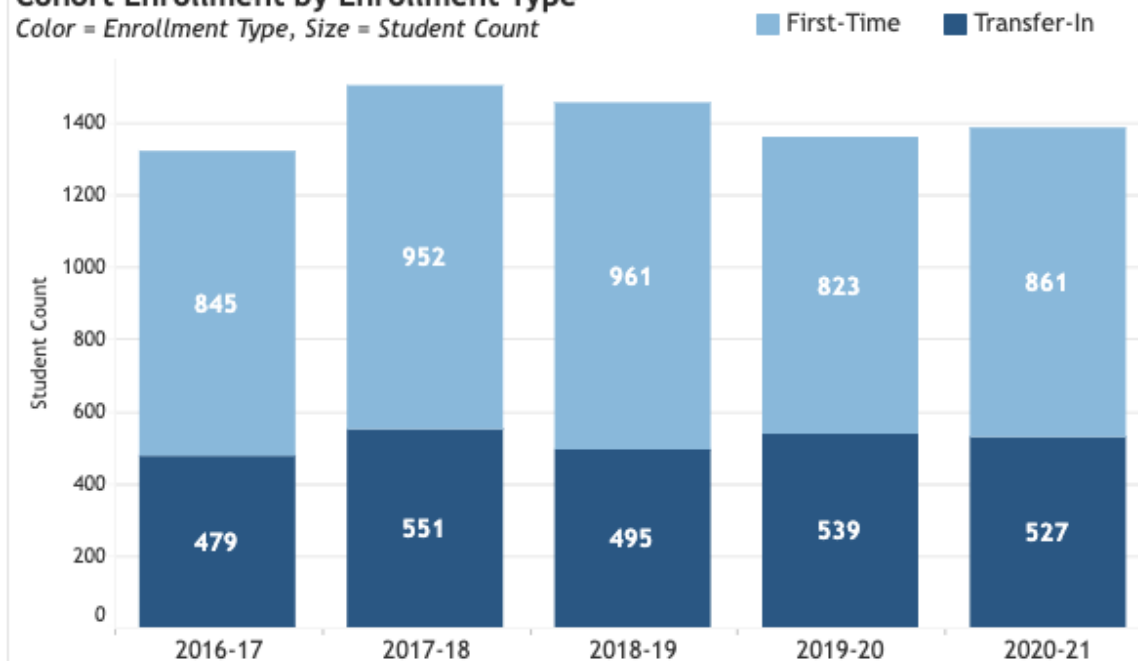
2020-21 Cohort First Time

861

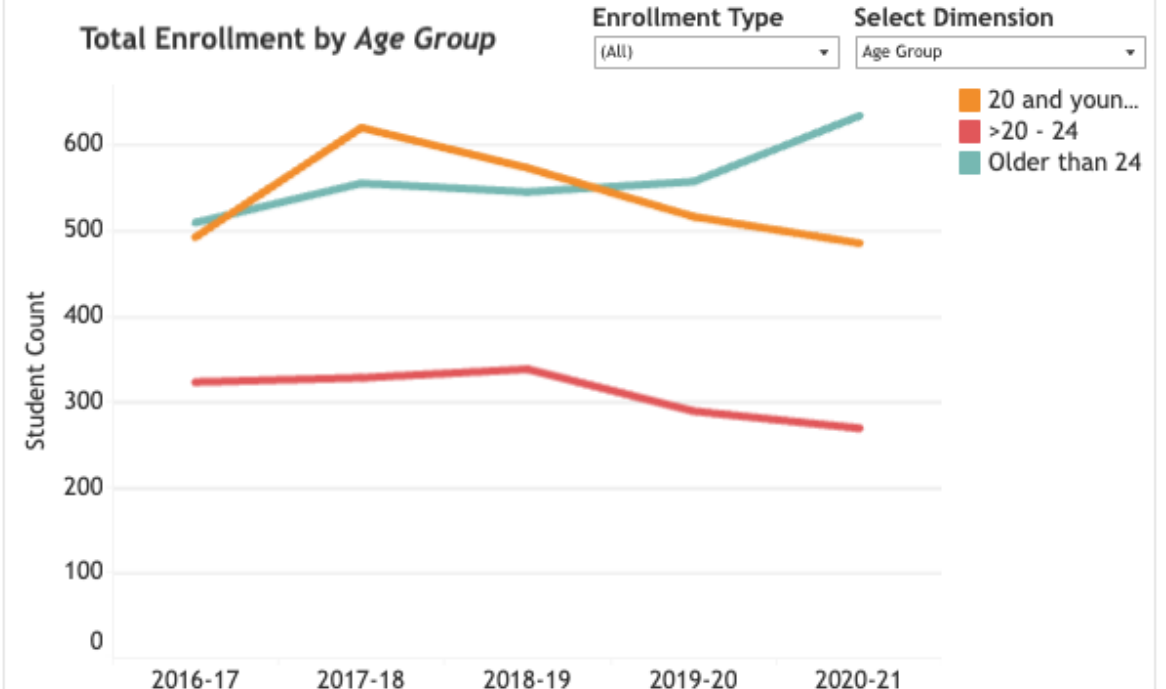
2020-21 Cohort Transfer In

527

Cohort Enrollment by Enrollment Type
Color = Enrollment Type, Size = Student Count



Total Enrollment by Age Group



Source: National Student Clearinghouse Postsecondary Data Partnership (data validation and update still in progress)

Vermont State University

What proportion of incoming students are first time and transfer?

Please Note: Selecting "All" for Cohort Term displays data for ALL students enrolled in a single academic year, including both first-time and transfer students across fall, winter, spring, and summer terms.

2020-21 Cohort Total Enrollment

1,244

2020-21 Cohort First Time

665

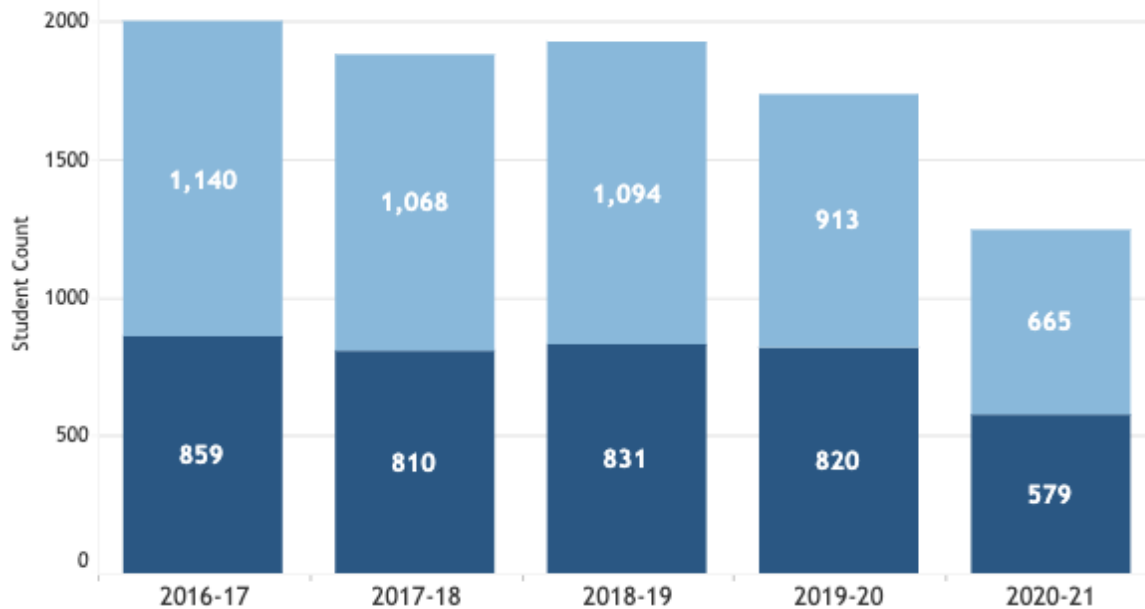
2020-21 Cohort Transfer In

579

Cohort Enrollment by Enrollment Type

Color = Enrollment Type, Size = Student Count

First-Time Transfer-In



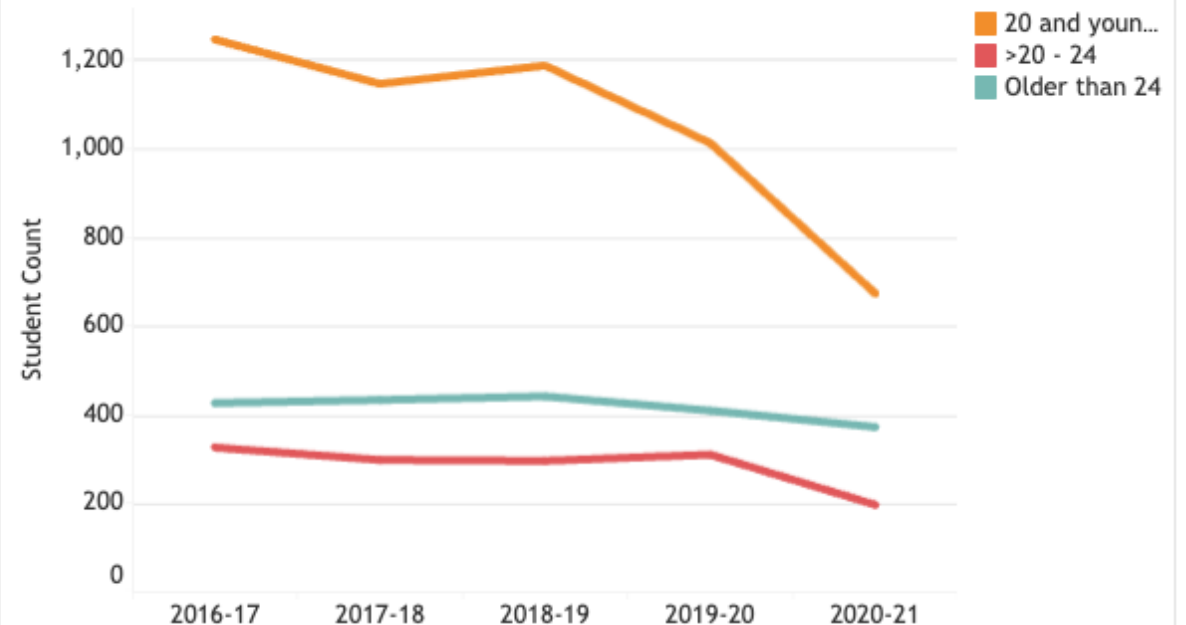
Total Enrollment by Age Group

Enrollment Type

(All)

Select Dimension

Age Group

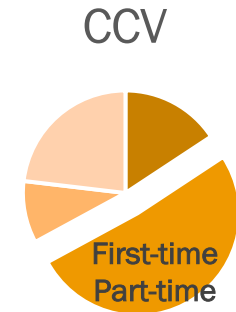
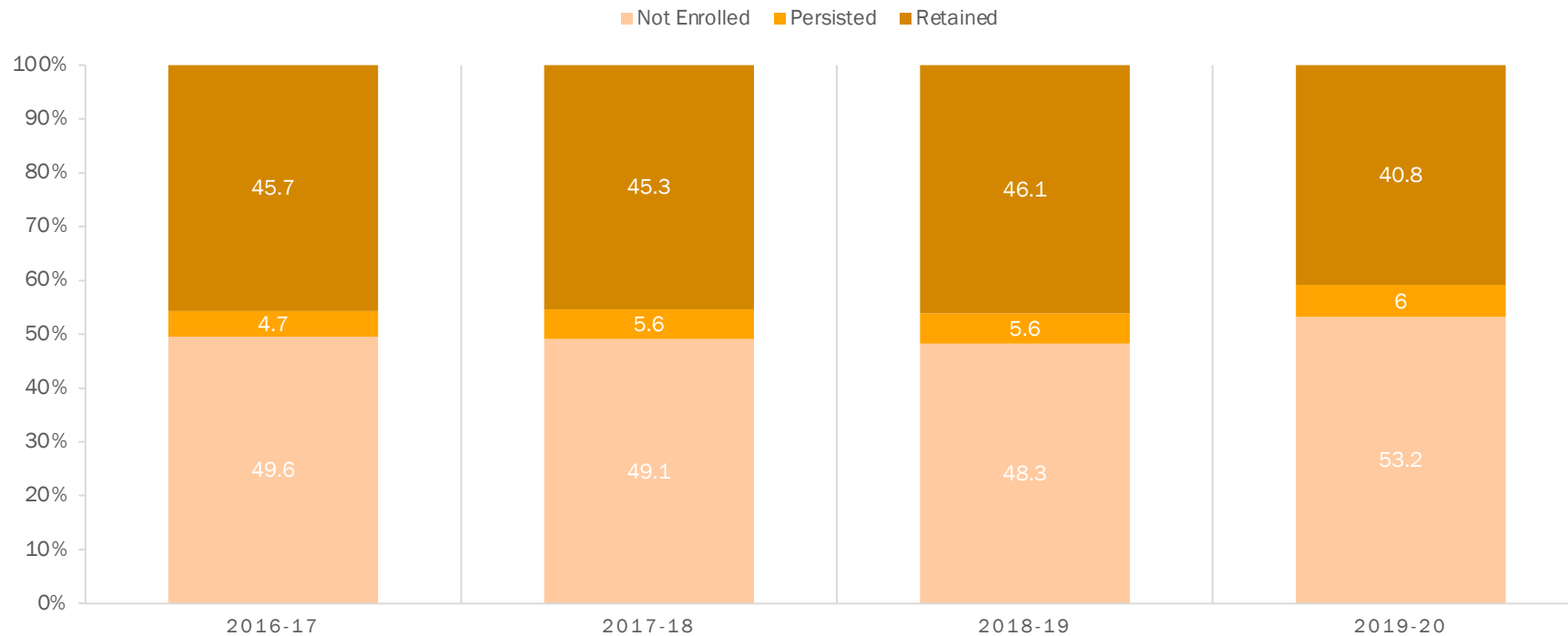


Source: National Student Clearinghouse Postsecondary Data Partnership (data validation and update still in progress)

Community College of Vermont

What proportion of the entering cohort of *First-time Part-time* students are enrolled or have completed a credential after one year at CCV (retained) or another institution (persisted)?

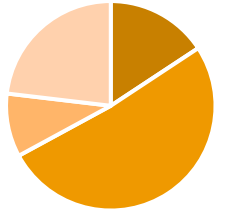
CCV Entering Cohort of First-time Part-time
Size = Student Count, Color = Year 2 Outcome



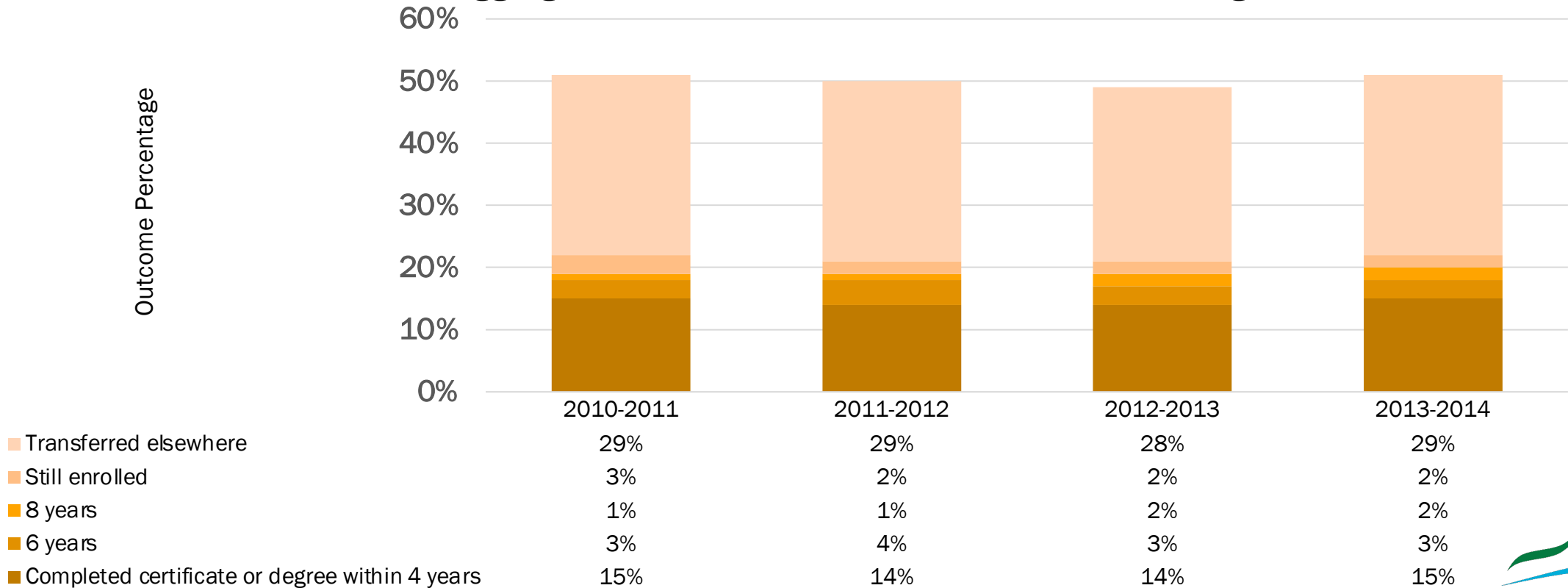
Source: National Student Clearinghouse Postsecondary Data Partnership (data validation and update still in progress)

Community College of Vermont

What were the graduation and transfer outcomes for all cohorts entering Community College of Vermont between 2010 and 2013?



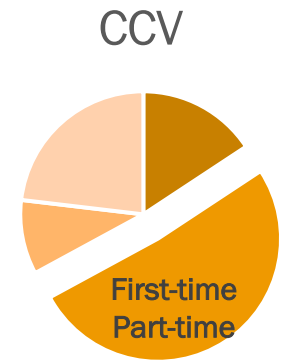
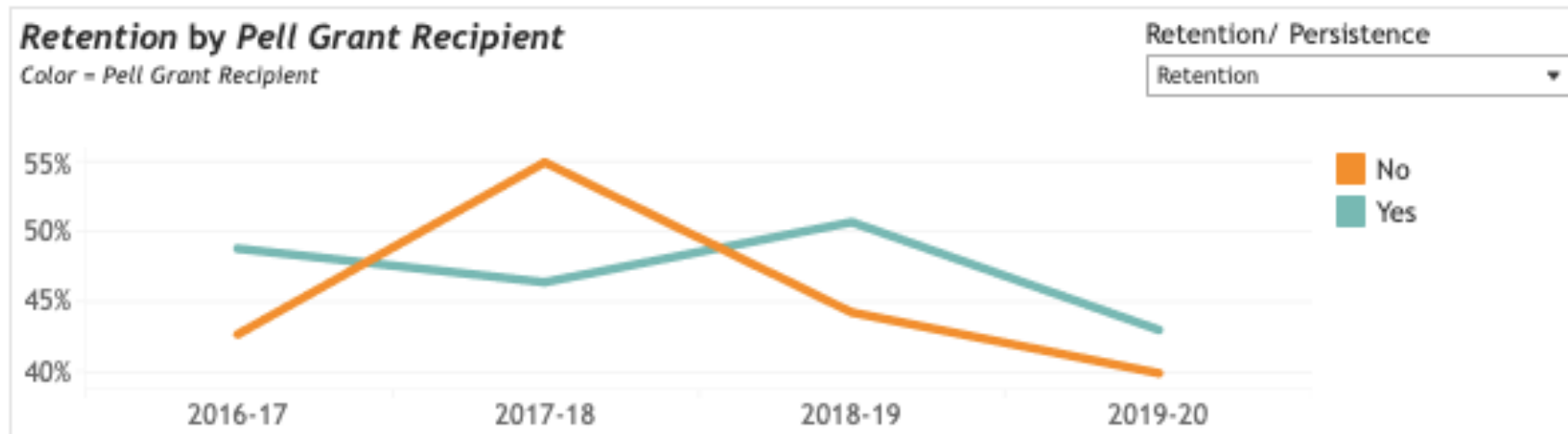
Aggregate Success Outcomes for Total CCV Entering Cohort



Source: IPEDS Outcomes Survey. Measures highest credential completed at institution within timeframe, whether student is still enrolled at the institution after 8 years, and whether student transferred elsewhere later.

Community College of Vermont

How does the retention and persistence differ for First-time Part-time Students receiving Pell and those who do not?

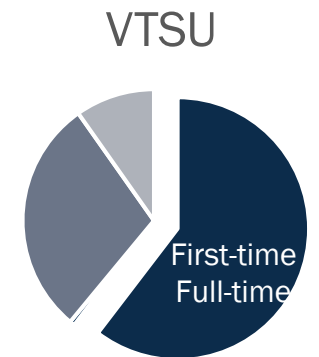
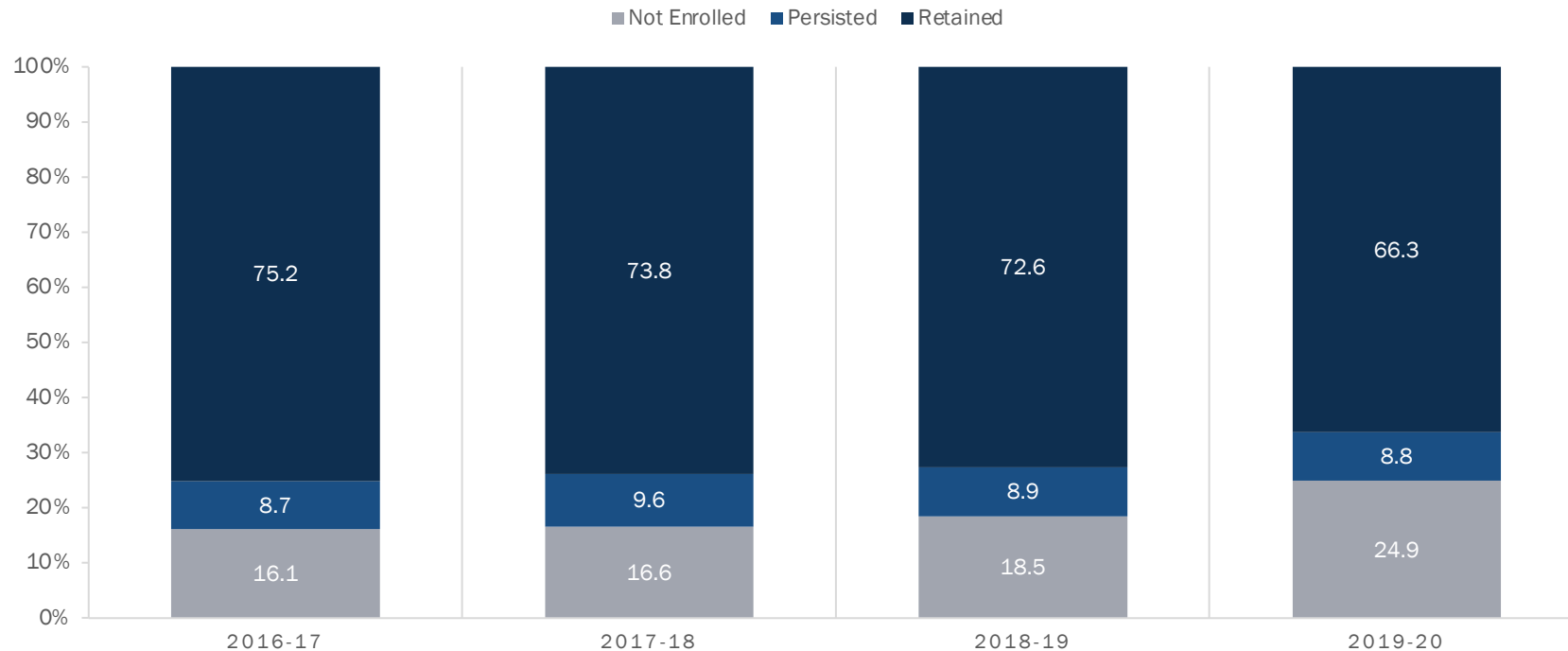


Source: National Student Clearinghouse Postsecondary Data Partnership (data validation and update still in progress)

Vermont State University

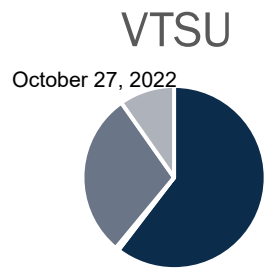
What proportion of the entering cohort of *First-time Full-time* students are enrolled or have completed a credential after one year at VTSU (retained) or another institution (persisted)?

VTSU Entering Cohort of First-time Full-Time
Size = Student Count, Color = Year 2 Outcome



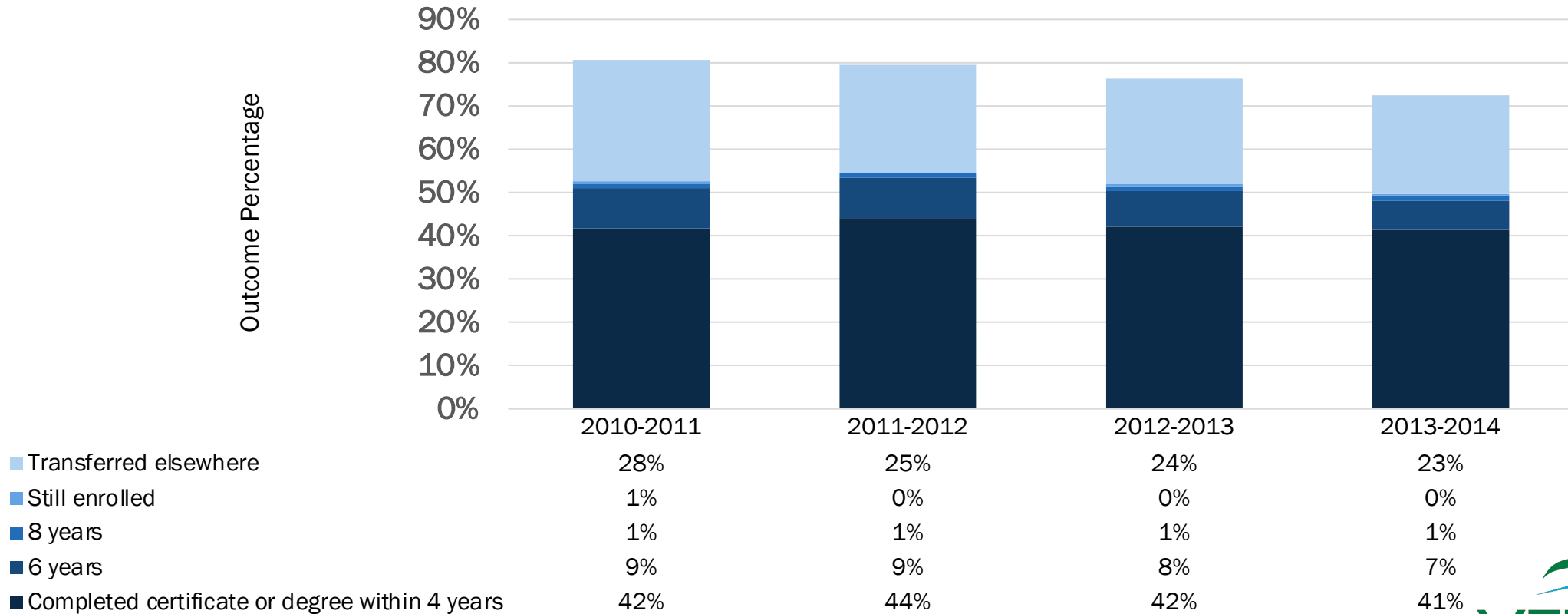
Source: National Student Clearinghouse Postsecondary Data Partnership (data validation and update still in progress)

Vermont State University



What were the graduation and transfer outcomes for all cohorts entering Vermont State University between 2010 and 2013?

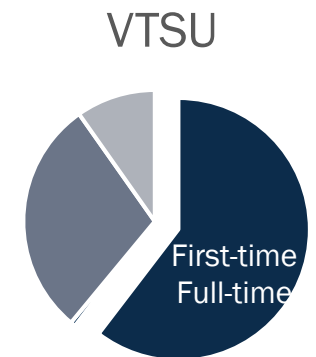
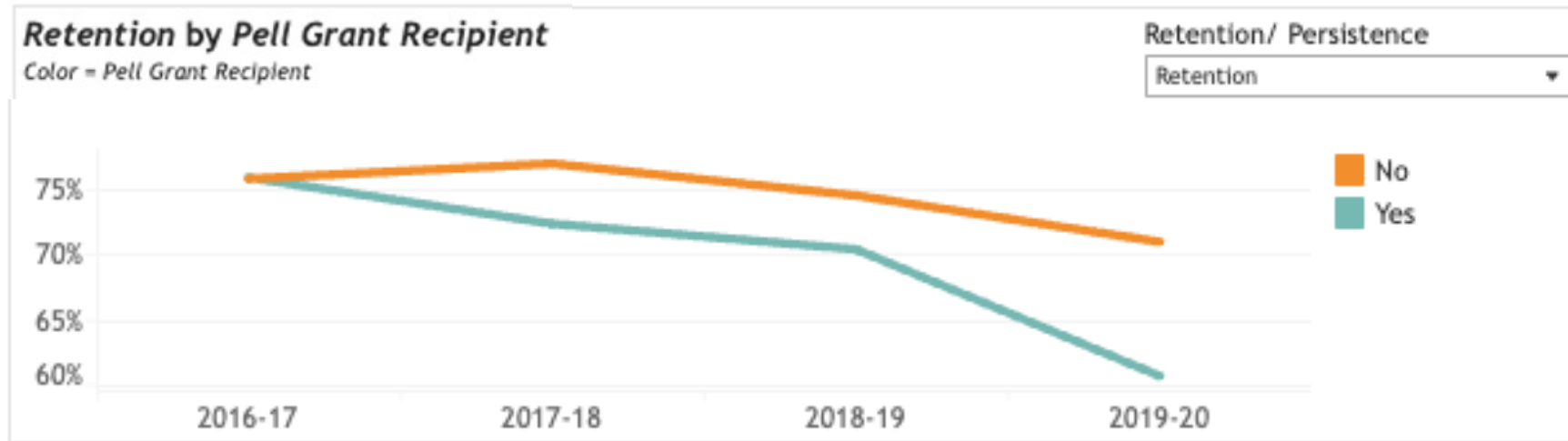
Aggregate Success Outcomes for Total VTSU Entering Cohort



Source: IPEDS Outcomes Survey. Measures highest credential completed at institution within timeframe, whether student is still enrolled at the institution after 8 years, and whether student transferred elsewhere later

Vermont State University

How does the retention and persistence differ for First-time Full-time Students receiving Pell and those who do not?



Source: National Student Clearinghouse Postsecondary Data Partnership (data validation and update still in progress)

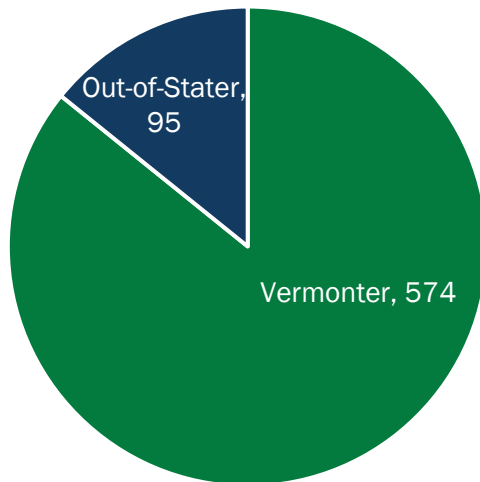
Quality & Relevance

Percentage of Graduates in Licensure Professions attaining licensure

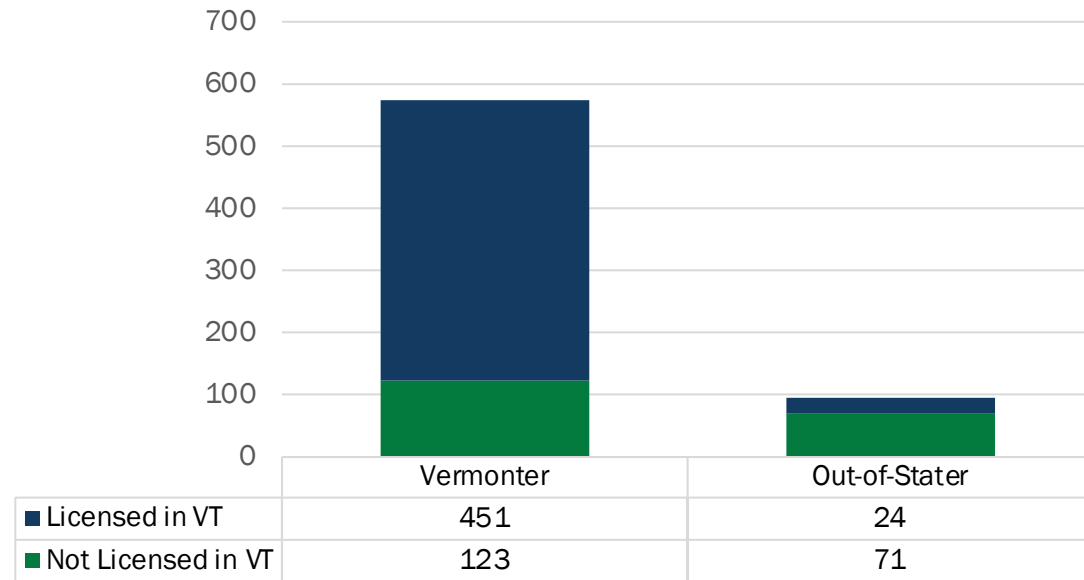
Licensure Programs

How many students graduated from licensure programs in Fall 2020, Spring 2021, and Summer 2021?

Students Graduating Fall 20 to Summer 21 in Programs Leading to Licensure



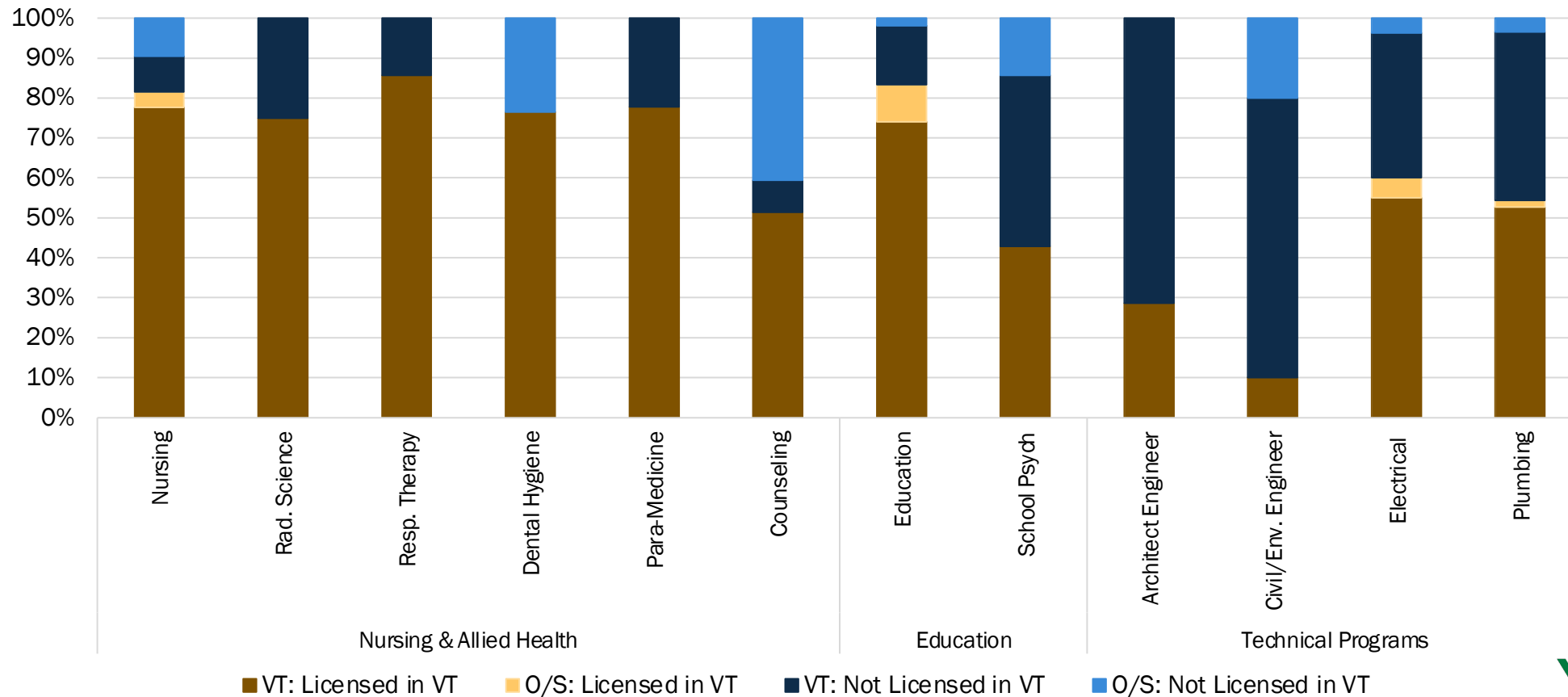
Licensure status by residents for students Graduating Fall 20 to Summer 21



Licensure Programs

What proportion of graduates in licensure programs attained a license within 12 months of graduation?

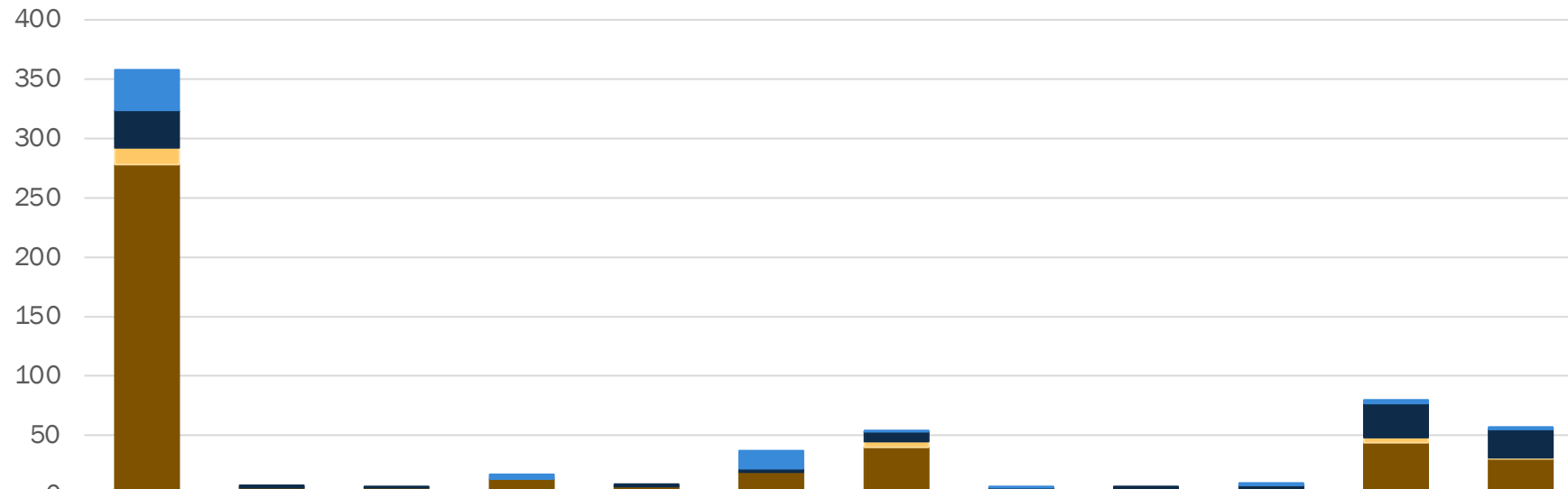
Vermont Licensure Status for Fall 20, Spring 21, and Summer 2021 Graduates



Licensure Programs

What proportion of graduates in licensure programs attained a license in Vermont within 12 months of graduation?

Vermont Licensure Status for Fall 20, Spring 21, and Summer 2021 Graduates



	Nursing	Rad. Science	Resp. Therapy	Dental Hygiene	Para-Medicine	Counseling	Edu	School Psych	Architect Engineer	Civil/Env. Engineer	Electrical	Plumbing	
	Nursing & Allied Health						Education			Technical Programs			
■ O/S: Not Licensed in VT	34			4		15	1	1		2	3	2	
■ VT: Not Licensed in VT	32	2	1		2	3	8	3	5	7	29	24	
■ O/S: Licensed in VT	14						5				4	1	
■ VT: Licensed in VT	278	6	6	13	7	19	40	3	2	1	44	30	

Financial Stability

- Composite Financial Index FY2021
 - Primary Reserve Ratio
 - Net Operating Revenues
 - Return on Net Position
 - Viability Ratio
- Courses Volumes by Enrollment Size

Primary Reserve Ratio – FY2021

How well can the Vermont State Colleges weather financial issues?

Standard
 .4x +

FY21	FY20	FY19	FY18	FY17	FY16	FY15	FY14	FY13	FY12
0.51	0.25	0.21	0.20	0.17	0.18	0.18	0.19	0.18	0.22

Net Operating Revenue Ratio

Is the Vermont State Colleges System living within its means?

Standard
 2% to 4%

FY21	FY20	FY19	FY18	FY17	FY16	FY15	FY14	FY13	FY12
23.0%	3.4%	-0.8%	-1.4%	-1.2%	-3.1%	-1.2%	-2.7%	-5.2%	-2.4%



NOTE: Financial ratios will be updated upon the conclusion of the FY2022 Financial Audit and will be made available to F&F at the October meeting

Return on Net Assets Ratio – FY2021

What is the total economic return of the Vermont State Colleges?

Standard
3% - 4%

FY21	FY20	FY19	FY18	FY17	FY16	FY15	FY14	FY13	FY12
41.9%	6.6%	-1.1%	-1.3%	0.5%	-3.0%	-4.0%	-2.8%	8.4%	7.5%

Viability Ratio

Does the Vermont State Colleges System have the net assets necessary to cover its debt?

Standard
1.25x – 2.0x

FY21	FY20	FY19	FY18	FY17	FY16	FY15	FY14	FY13	FY12
0.80	0.38	0.32	0.30	0.25	0.27	0.27	0.28	0.26	0.29



Composite Financial Index – FY2021

How healthy is the organization as a whole?

FY2021 Financial Ratios	VSCS Value	Strength Factor	Weighting Factor	CFI Score
Primary Reserve	0.51	1.35	35%	1.35
Net Operating Revenue	23.0%	32.92	10%	1.00
Viability Ratio	0.80	1.91	35%	0.67
Return on Net Position	41.9%	20.93	20%	2.00
Composite Financial Index				5.02



- 1 to 1 Assess viability to survive
- 0 to 3 Reengineer
- 3 to 5 Direct resources to allow transformation**
- 5 to 7 Focus resources to compete in future
- 7 to 9 Opportunities to experiment with new initiatives
- 8 to 10 Deploy resources to achieve robust mission

Composite Financial Index Scale

How healthy have the Vermont State Colleges been over the last 10 years?

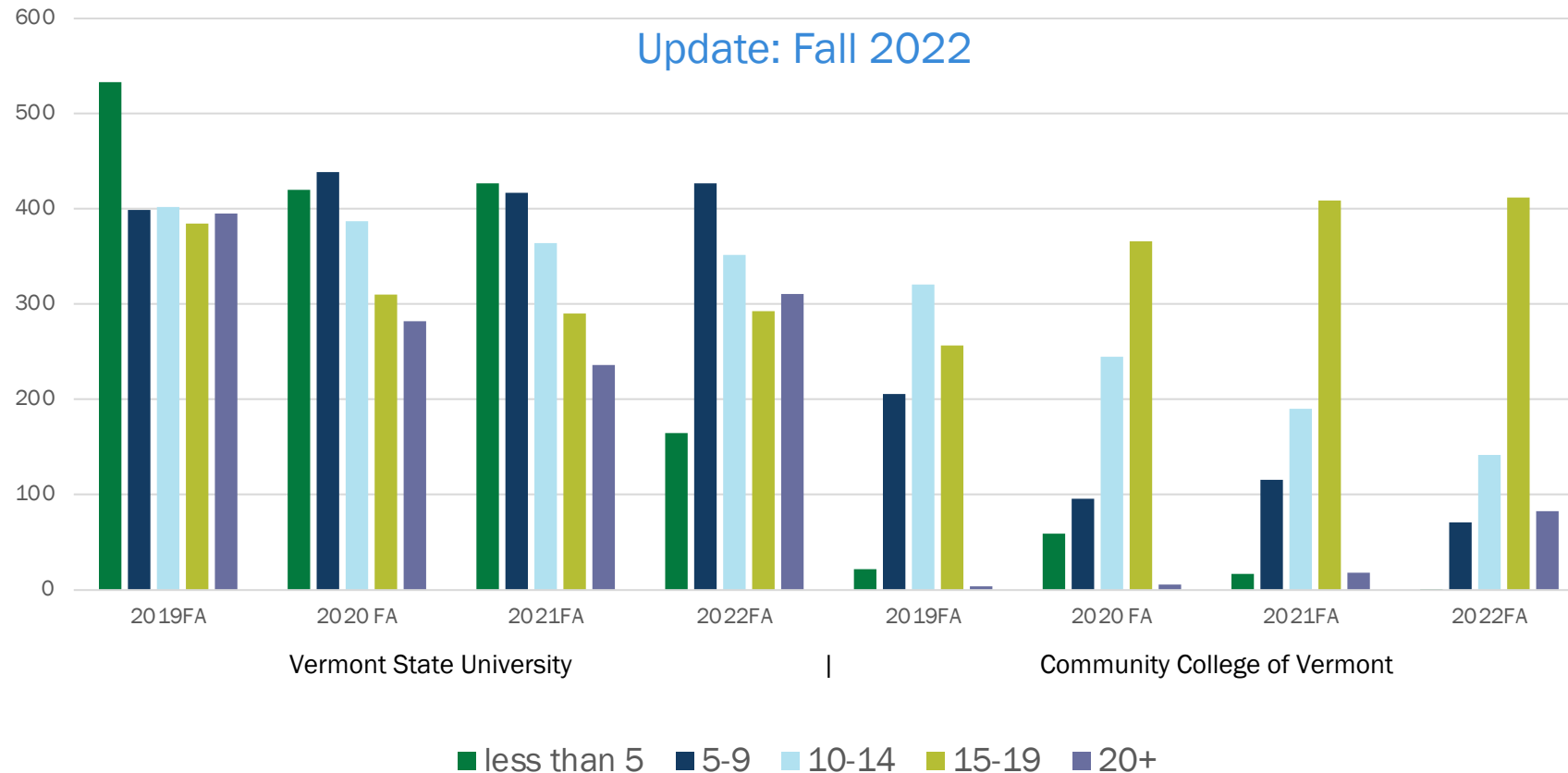
FY21	FY20	FY19	FY18	FY17	FY16	FY15	FY14	FY13	FY12
5.02	2.11	0.59	0.45	0.55	(0.05)	0.14	0.06	0.79	1.23



- 1 to 1 Assess viability to survive
- 0 to 3 Reengineer
- 3 to 5 Direct resources to allow transformation
- 5 to 7 Focus resources to compete in future
- 7 to 9 Opportunities to experiment with new initiatives
- 8 to 10 Deploy resources to achieve robust mission

Course Volume by Enrollment Size

How has the volume of sections taught by class size changed over time?

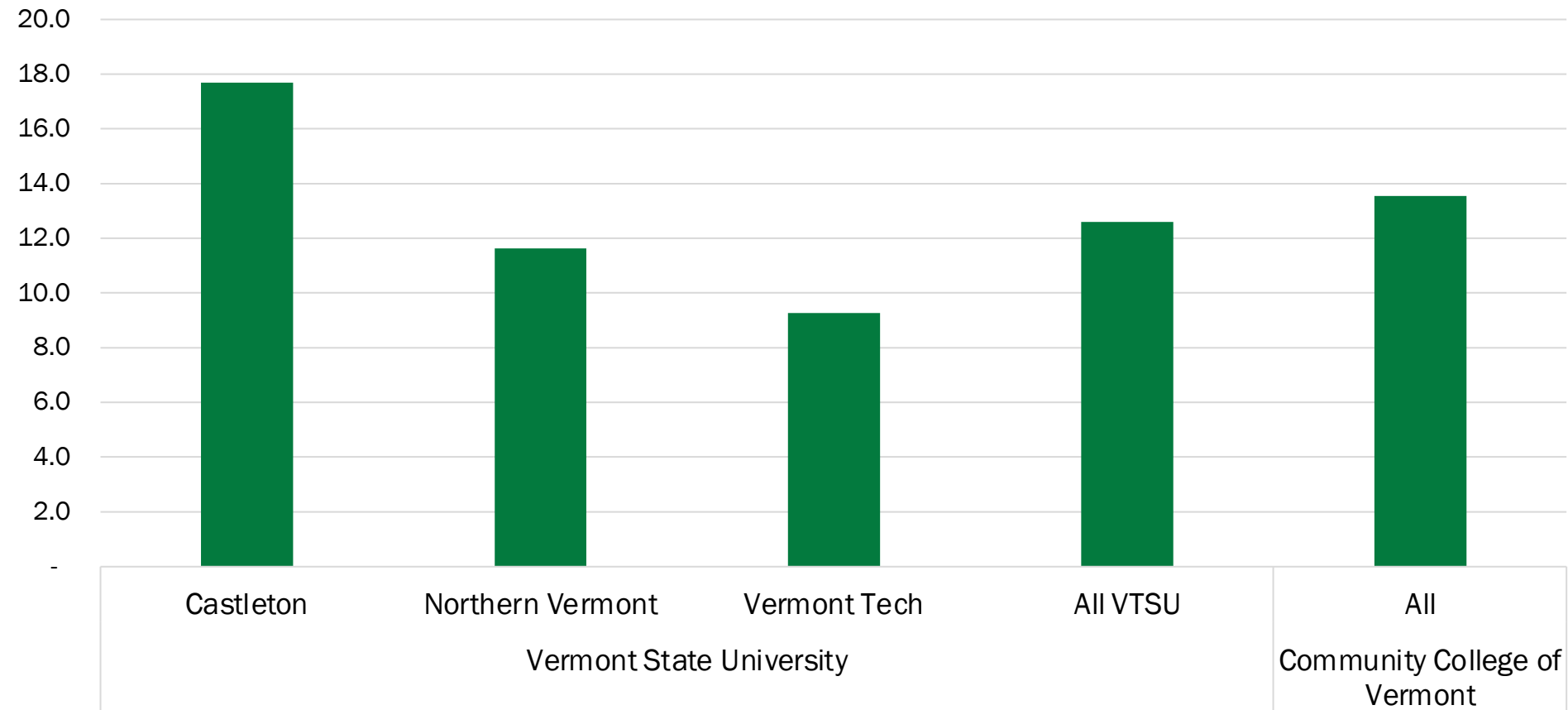


Note: Data for 2019-2021 include courses under 5 that are often independent studies, internships, and other learning opportunities and don't incur the same expense. Data for Fall 2022 exclude those courses specifically labeled as independent studies or individual experiences, internships, and tutorials.

Student Credit Hour Production

Per instructor, how many student credit hours are taught annually?

FY2021 Student Credit Hours / Workload Fall & Spring



Note: Includes all Fall, Winter, and Spring Sections. “All” is the weighted average for the institution

ITEM 3:
Policy 109 Update

Policy 109: Annual Enrollment and Cost Effectiveness

“Each institution will review program enrollment, retention, graduation, and cost data on an annual basis within the context of shared governance and ongoing institutional planning and improvement. Annual data on all VSC degree programs and summary reports of each institution’s plans to evaluate and address program enrollment and cost effectiveness will be submitted to the Board of Trustees for review.”

Sample: Previous Policy 109 Data Report

Castleton University										
College-Wide Summary			Total Faculty* 2018-2019	Fall 2018 Headcount Enrollment	Fall 2017 Headcount Enrollment	Fall 2016 Headcount Enrollment	Total Degrees Awarded 2017-2018	Total Degrees Awarded 2016-2017	Total Degrees Awarded 2015-2016	
			82	1,916	1,869	1,999	418	422	498	
Dept.	Degree Level	Major								2019 Notes
Art			3.5	21	23	30	8	6	7	
	Bachelors	Art		21	23	30	8	6	7	1 FT faculty retiring (5/19) = 2.5 FT faculty
Business Administration			7	300	300	348	82	88	85	
	Associates	Business Administration		4	4	12	4	1	3	Designed as exit degree
	Bachelors	Business Administration		261	260	303	69	72	69	
	Bachelors	Computer Information Systems		31	30	25	3	6	10	
	Masters	Accounting		4	6	8	6	9	3	Recommended for review for renovation (e.g. inclusion as a concentration in the MBA)

VTSU Program Analysis Metrics (rpK GROUP, 2021)

- *Balanced set of metrics*

ADMISSIONS: yield of accepted applicants who enroll

ENROLLMENT: program headcount and 5-year change

RETENTION: 5-year average

GRADUATION: 5-year average

DEGREES AWARDED: 5-year total

INSTRUCTIONAL EFFICIENCY: by department

LABOR MARKET: demand and growth trend; gap analysis

- *Evaluation for program investment, optimization, or elimination*

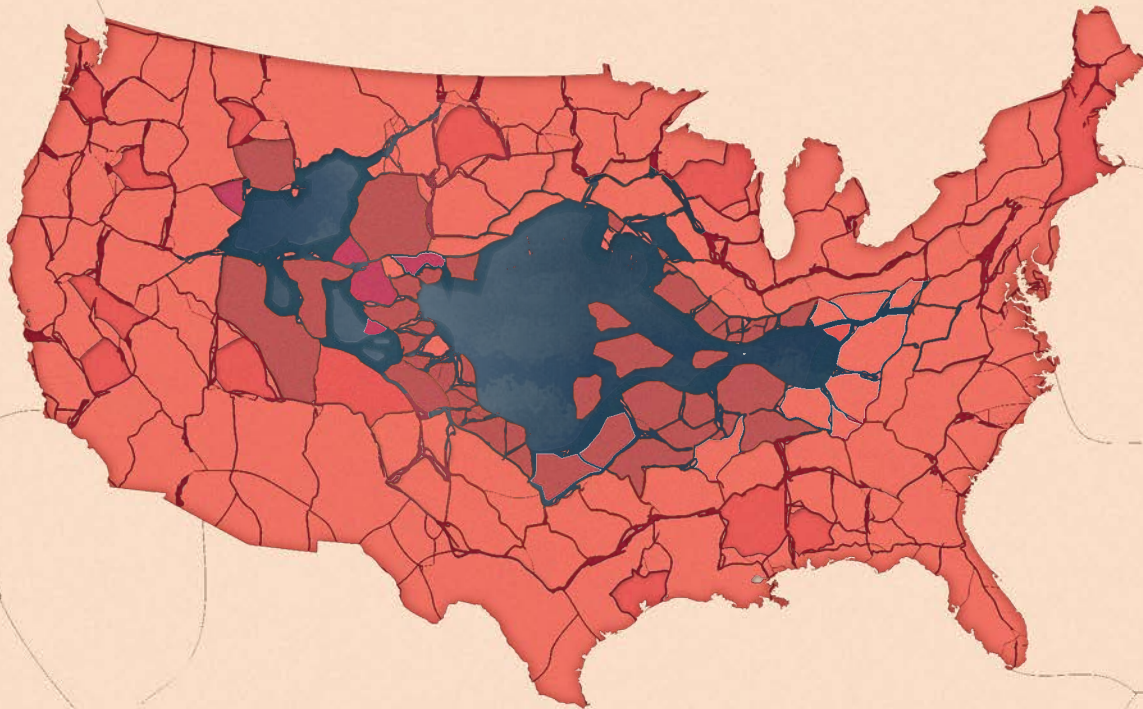
Policy 109 Data Framework: Preliminary Draft

Data Element	VTSU Metric	CCV Metric
ADMISSIONS	Yield rate (accepted students who enroll; 5-year ave.)	Application totals (5-year ave.)
ENROLLMENT	Annual headcount and 5-year change	
RETENTION	5-year average	
GRADUATION	5-year average	
DEGREES AWARDED	5-year total	
INSTRUCTIONAL EFFICIENCY	By department	By institution
LABOR MARKET	1) Demand and growth trends: <u>in aligned occupation(s) as identified by programs</u> (see http://www.vtlmi.info/public/occprjvt.htm) 2) Gap analysis: high-demand occupations without aligned programs (see http://www.vtlmi.info/decliningandhighdemandocc.pdf)	

ITEM 4:
EMSI Article: The Demographic Drought

THE DEMOGRAPHIC DROUGHT

How the approaching sansdemic*
will transform the labor market
for the rest of our lives



THE DEMOGRAPHIC DROUGHT

How the approaching pandemic will transform the labor market for the rest of our lives

Written by



Ron Hetrick

Hannah Grieser

Rob Sentz

Clare Coffey

Gwen Burrow

Design by

Daniel Botkin

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Workforce past

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FOREWORD

HOW WE RESPOND TO THE VANISHING WORKFORCE

This research highlights one of the most important issues in our lives: living in a world where there are simply not enough workers to manage and grow our companies. “Hire more people” has long been an axiomatic first step to growth. How will we adapt when we can’t take the “more people” part for granted??

Well, I speak with the leaders of big companies every day, and this issue is on their minds. In fact, at company after company I’ve heard the same thing: we need to rethink our entire strategy because we simply cannot find the people and skills we need.

Business leaders are hard at work developing these necessary new strategies. Today, internal mobility, reskilling, and job redeployment are among the most important innovations at work. Companies are becoming very open to part-time workers, employees who live and work remotely, and workers who need training to perform. In fact, most companies are building their own internal academies (Bank of America, Verizon, Ashley Furniture Industries) to develop people from ever more diverse backgrounds.

To help retain valued people, the crusade to improve employee experience is growing by leaps and bounds. Not only

are companies investing in tools to make the workplace safe, there is an arms race of new IT systems, wellbeing offerings, and culture programs to make companies more enjoyable and rewarding, all with the goal of increasing tenure and retention.

And perhaps the most inspiring change is executives’ realization that people are not just an expense, but an asset that appreciates over time. Companies are raising wages, improving benefits, and increasing investment in development and career growth—discovering that these investments pay off. We live in a world where more and more work is automated every day: the big lesson of the pandemic is that CEOs have to take notice. If you aren’t investing in your people, your company won’t grow, and this spur to investment is good for business and individuals alike.

Thank you to Emsi for this important research. I hope it’s a wakeup call for every business leader and policymaker around the world.

Josh Bersin

Global Industry Analyst
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INTRODUCTION

THE SANSDEMIC IS COMING

In February 2020, before the COVID crisis, a record 70% of US businesses reported a talent shortage, [according to a Manpower survey](#). That was more than double the 32% of businesses who reported difficulty finding talent just five years earlier in 2015. When COVID hit and unemployment spiked to record highs, all talent shortages should have vanished.

BUT THEY DIDN'T.

Today, the economy is suffering from what some are calling the “[COVID paradox](#)”: millions of people out of work, millions of open jobs unfilled, and millions of people voluntarily bowing out of the labor market. As of March 2021, [19 million Americans](#) filed for some form of jobless benefits with a majority of the claims specifically for pandemic relief assistance. This despite a record number of [over 7M job openings](#).

The fact is, the US labor force participation rate (LFPR), which measures people working or actively seeking work, has dropped to lows we haven't seen [since the recession of the mid-1970s](#). Despite countless dislocations across the country, businesses [frantically posting for jobs](#) simply [cannot find enough people](#) to fill open positions.

Postsecondary enrollment has also tanked. Typically, economic upheaval

will send Americans rushing back to school in order to gain new knowledge and skills, but not so this time. Enrollment fell from 18.2 million students in 2019 to 17.8 million students in 2020, a loss of over 460,000 students, according to the [National Student Clearinghouse](#). Freshman enrollment in particular sank an unprecedented 13%.

WHAT'S GOING ON?

In the wake of such a chaotic year, it'd be easy to blame these disturbing trends on COVID and resultant policies, but that would be only partially accurate. COVID didn't create these problems, for these problems existed well before last year. The people shortage was already coming. It was almost here. All 2020 did was act as an accelerant. Everything that happened last year, including the radical steps the US took to battle the virus, simply sped up the effects of a more nefarious and long-term problem largely ignored by politicians and media alike:

The US is suffering the beginning phases of a great sansdemic—“without people,” or in our case “without enough people”—a demographic drought that is projected to worsen throughout the century and will impact every business, college, and region.

This is no COVID paradox. This is history catching up with us. We've been

approaching the edge of this cliff for decades, as a growing crowd of researchers and writers have observed the past few years:

- Nathan Grawe discussed America’s shrinking population and its impact on higher ed in particular in [Demographics and the Demand for Higher Education](#) (2018).
- Darrell Bricker and John Ibbitson wrote about the imminent people shortage in [Empty Planet](#) (2019).
- Brookings’ William Frey, who has written about demographic challenges for years, reported that the US just saw its [slowest population growth](#) in history.
- In recent weeks Tyler Cowen touched on the same issues in Bloomberg, observing that America’s [fertility rates have fallen](#) below replacement rates.
- Ross Douthat, a frequent writer on the declining American birth rate in The New York Times, suggests that, unless we find a solution, we will soon be living in a world that resembles nothing more than [“just a rich museum.”](#)

In this ebook, our goal is to draw more attention to this trend and help you better understand the three pre-existing conditions both revealed and exacerbated by 2020:

- The mass exodus of baby boomers (workforce past) - Last year, the number of baby-boomer retirees [increased by over a million](#). The largest generation in US history remains a powerful cohort of key workers that still hold millions of roles. Their sudden departure from the labor force will gut the economy of crucial positions and decades of experience that will be hard to fill en masse.
- Record-low labor force participation rate (LFPR) of prime-age Americans (workforce present) - Thousands of Americans have voluntarily [opted out](#) of looking for work. The children and grandchildren of baby boomers are not replacing the boomers who leave the workforce.
- The lowest birth rates in US history (workforce future) - The national birth rate, already in decline, hit a 35-year low in 2019, and the relative size of the working-age population has been shrinking since 2008. In fact, the national population is [projected to begin shrinking](#) by 2062. This means that over the next generation, talent shortages will only compound.

Regardless of what you think the ideal global population size might be, or whether you think our biggest problem is too few people or too many, a sharp and sudden population reduction will have enormous implications for the economy and the lifestyle we all take for granted. The ability to order a package and see it in days, to buy a cup of coffee on your way to work, to enjoy a wealth of affordable consumer goods, to have our garbage collected, to fill a prescription, to receive nursing care—all these functions depend on an army of workers that simply cannot be replaced if they were never born.

To explore the causes and features of the coming sansdem, as well as to consider ways that you can survive or even thrive throughout—read on.

»Note: Discussion of complex demographic realities inevitably involves technical jargon. For definitions of and differences between key terms, such as “birth rate” vs. “total fertility rate,” please refer to the [appended glossary](#).

CH 1.

WORKFORCE PAST

Baby Boomers: The Rising Tide That Lifted All Boats

TAKEAWAYS

»In normal years, 2 million baby boomers retire. But in 2020, over 3 million retired. COVID and related policies drove an additional 1.1 million people from the labor market, [according to Pew Research Center](#).

»Boomers are an enormous cohort of [76 million Americans](#) born between 1946 and 1964. They powerfully shaped every institution they touched, but they are leaving the labor market they built and defined in droves.

»The gap the boomers leave can't be entirely filled, because around 1970, the total fertility rate [dipped below 2.1](#). While boomers were born into families with an [average of four children](#) each, boomers themselves had an average of fewer than two children and did not replace themselves.

»Boomers are retiring with an average \$1.2 million household net worth, making them the richest generation in American history. This accumulated wealth may further reduce the labor participation of the already sub-replacement workforce poised to succeed the baby boomers.

The baby boom shaped our view of the future of the world's population

To understand the coming pandemic, we need to first understand the legacy of the baby boomers. As their generational nickname suggests, boomers—the generation born between 1946 and 1964—are the product of the enormous surge in births after World War II. After falling steadily through the Great Depression, the US birthrate swung upwards, and peaked at nearly 27 births per 1,000 people in 1949.

In the years following the baby boom, [exponential global population growth](#) seemed inevitable for the foreseeable future. Not only were people having a lot of babies, but, thanks to advances in medicine, nutrition, and living conditions, these babies were now surviving infancy in greater and greater numbers. Those same advances that reduced infant mortality also helped raise adult life expectancy to historic highs.

The combination of fertility and longevity has pushed the global population toward nearly 8 billion as of 2020. That number is expected to swell to [nearly 10 billion](#) by 2050. The baby boom shaped our view of the future of the world's population, particularly the possibility of overpopulation. For years, people naturally assumed that baby booms would be a continuous and exponential growth driver.

Today we know that this is not the case, as we shall see. But first, let's look at the effect of boomers on the labor force and hiring norms.

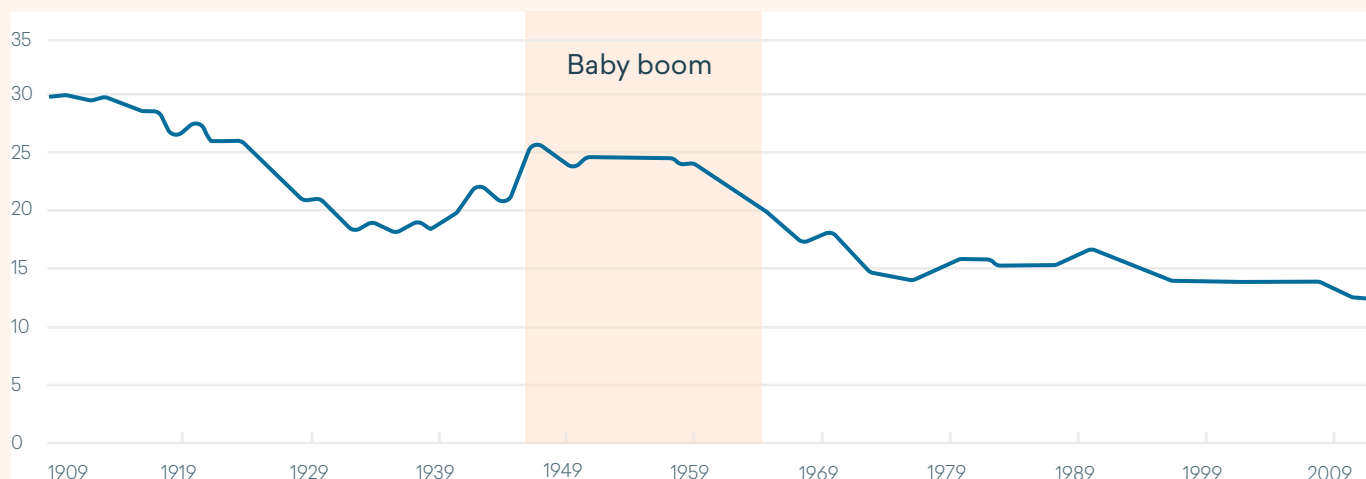
Boomers were a labor force explosion that powerfully shaped hiring norms

The population explosion meant tremendous growth in the labor force, growth whose benefits we've enjoyed since the 1970s. And because women began entering the workforce in much higher numbers than in any time since World War II, the workforce and consequent productivity gain was twofold.

From when the data was first collected in 1948 to the late 60s, the LFPR for women over age 25 [jumped from 30% to 40%](#). Once the first female boomers entered the workforce in the early 1970s, their LFPR shot up even more, [hitting 60% by the mid 90s](#).

This was a powerful combination: an enormous population of boomers and extraordinary growth in female participation. The US labor force swelled to unparalleled levels. The workforce gained a massive generation, then nearly doubled it as women joined the men.

US birth rates (births per 1,000 population)



Source: National Center for Health Statistics, 2005; Martin et al., 2012; Martin et al., 2013; Hamilton and Sutton, 2013.

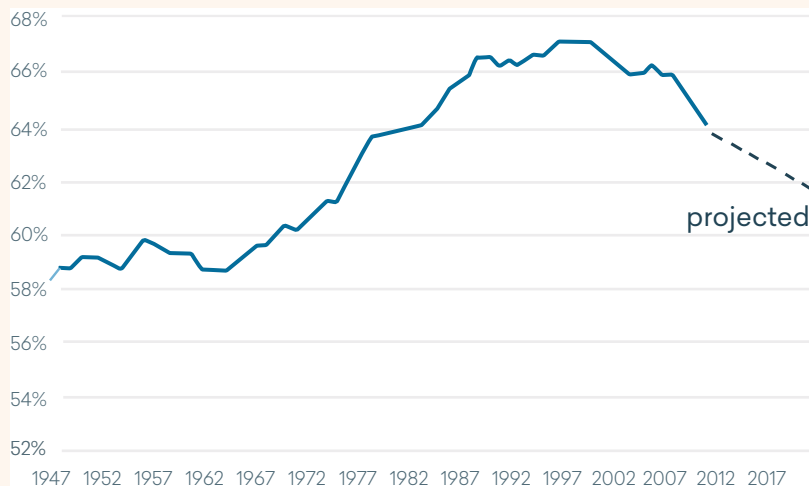
One of the most powerful ways boomers shaped the American economy was their effect on hiring norms. Boomers provided firms with an abundance of labor power. Not only were there simply a lot of boomers, there were a lot of educated boomers, with [college attendance soaring](#) as boomers reached college age in the 1960s and 70s. And, as 80s satires of the upwardly mobile yuppie pointed out, these educated, plentiful workers were highly motivated to build wealth and move up the career ladder.

Rather than the model of the “company man”—defined by internal promotion, on-the-job training, and a workforce identity shaped by membership in a particular firm—the open market became the norm. Workers identified themselves by their profession rather than their company: the “GE man” became an “IT manager with over 15 years of experience.”

As boomers moved around in search of opportunities afforded by the booming economy, talent became abundant and affordable. On the open market, companies could shop for ready-made workers: the most qualified applicant, the most experienced veteran of a given role. Workers were the commodity, and companies could afford to be choosy, hiring from other companies with talented individuals who were ready for a change, or from any number of specialized programs that had emerged since the 1980s. Such programs were built to educate college students for particular roles, and churned out workers at regular and reliable rates.

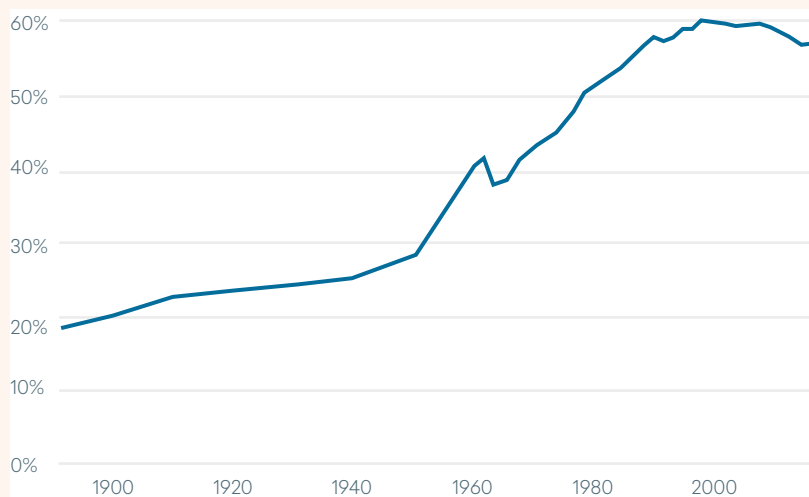
Less attached to a company than to a profession, and with a healthy economy affording them lots of opportunities, boomers marketed themselves to companies. The advent of internet job postings opened up the market

Labor force participation rate 1947-2012 and projected 2022



Source: U.S. Bureau of Labor Statistics.

Female LFPR jumped up to 60% by the mid 1990s



Source: Our World in Data based on OECD (2017) and Long (1958)

even more, creating wider and wider recruiting networks, which massively benefited companies and individuals alike. Companies could post jobs and see lots of applicants. People could constantly search for new or better paying jobs. They could play the field and act as free agents. Wages and salaries grew. The baby boomer generation, and the firms they started and worked for, flourished.

These conditions created deeply entrenched norms in workforce preparation and talent acquisition. And these norms

were perfectly reasonable while said conditions were maintained. But these conditions won't last forever. For many industries, they're already gone.

Boomers are exiting the labor force faster than ever

We're still living in the world of work created by the boomers, but boomers are no longer its core participants. As of 2016, millennials became [the single largest group](#) in the labor force—a group that is showing radically different attitudes toward work, which presents distinct challenges we'll discuss in Part 2.

According to [Pew Research Center](#) some 2 million baby boomers retire each year. In 2020, this number appears to have grown to an historic high: over 3 million decided to end their careers.

Much of this is likely related to the fact that over the past year, work has become significantly more remote (people aren't allowed to work near their colleagues), exhausting (it's hard to put in hours of Zoom calls every day), and isolated (if people were staying in the

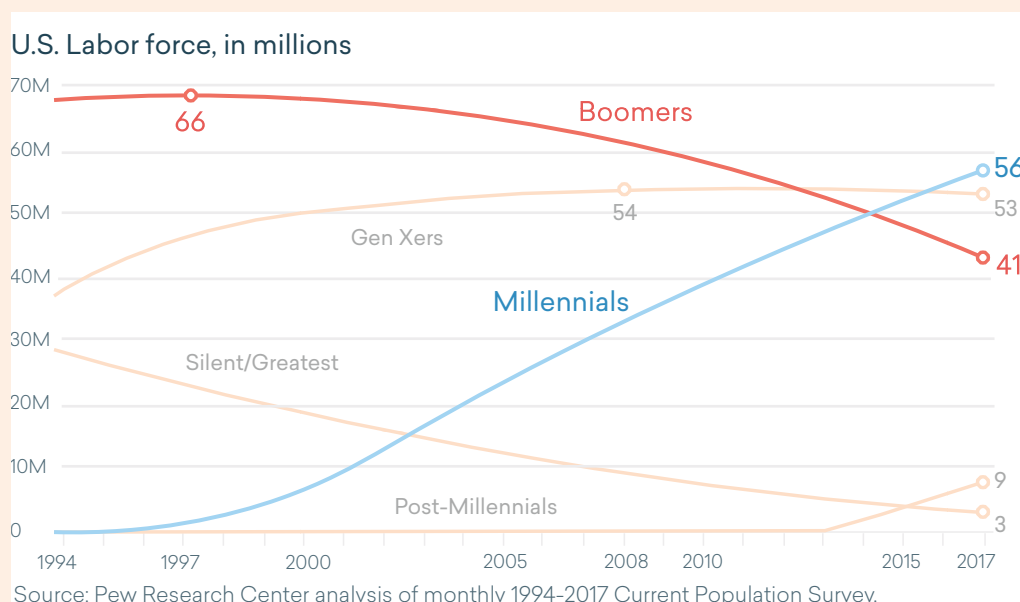
workforce for community and culture, those incentives have largely been cut off). Further, many boomers were surely worried about catching the virus and opted to stop out.

And given boomers' high net worth and decreased need to punch the clock, they have wide latitude in their career decisions. Yes, many boomers were pushed out of the labor force [due to job loss](#). But to many more, now probably seems as good a time to retire as any.

This alone is likely having a far greater impact on the labor market than is being reported. Why? Boomers are often vacating higher level and highly valued positions in their companies. Many boomers helped build those companies, hold senior positions, and, most importantly, have many years of accumulated knowledge and experience, which will be tremendously difficult to transfer over to younger workers. As companies attempt to replace these boomers, they will be greeted with a massive challenge.

Millennials became the largest generation in the labor force in 2016

Note: Labor force includes those ages 16 and older who are working or looking for work. Annual averages shown.



Boomers aren't being replaced

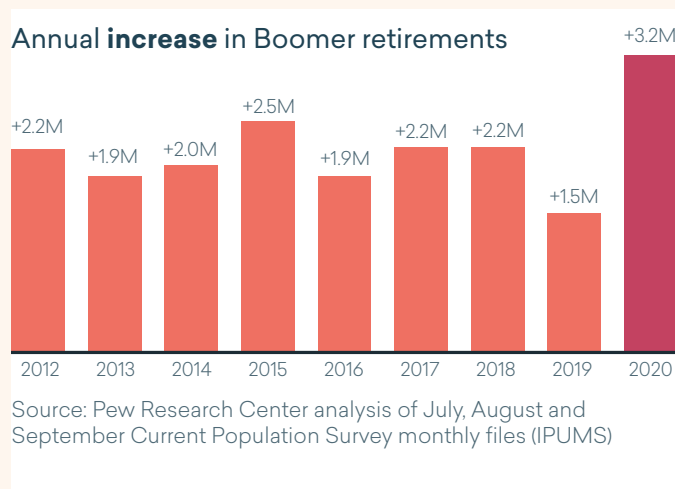
2020 sped up an inevitable process: the accelerated exit of baby boomers from the economy they created is being compounded by the fact that boomers are not being replaced.

For the US population to reproduce itself—meaning, for current population numbers to stay the same—the total fertility rate (TFR) needs to equal 2.1 children per 1 woman. When the TFR stays at or near 2.1, one child is born to replace every person now living (with the .1 allowing for cases of early mortality). In other words, the population doesn't grow, but it is at least replaced. Yet, with a few annual exceptions, America's TFR has been far below 2.1 since 1971.

This means that there aren't enough millennials and Gen Zers to fill boomers' shoes. Boomers spent more time on career and income, and less on reproducing themselves. While boomers were born into families with an [average of four children](#) each, boomers themselves had an average of just 1.8 children. Thus, as they leave the workforce, there simply aren't enough workers to replace them.

We'll discuss this problem further in Chapter 3.

The number of retired Baby Boomers rose more from 2019 to 2020 than in prior years

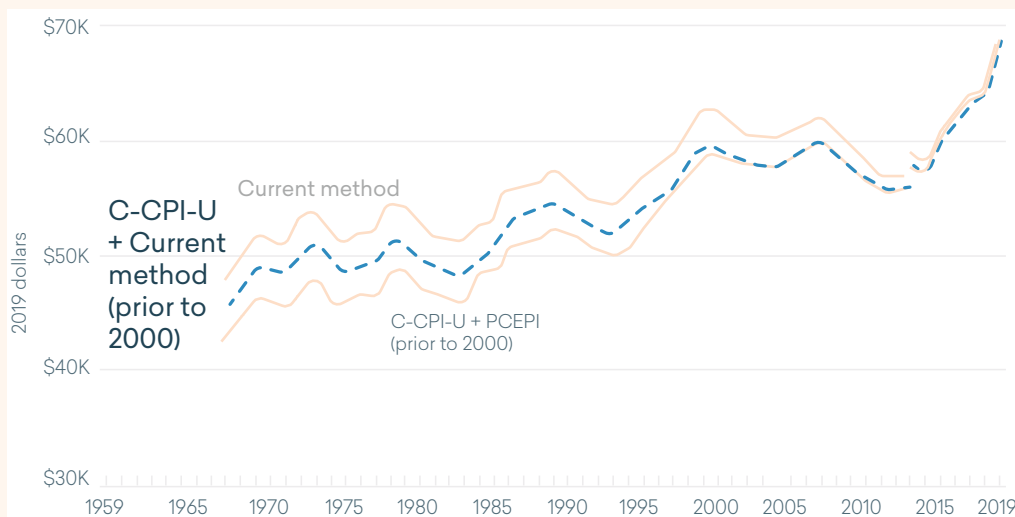


Industrious boomers generated incredible amounts of wealth—which their children stand to inherit

We turn now to another major impact of the boomers: wealth. The work of [76 million boomers](#) generated incredible economic prosperity. This was partly because there were so many of them, including, as we saw earlier, tens of millions of women.

This tsunami of workers generated pots of wealth, as we can see with the national GDP. In the 28-year period from 1947 to 1975, [real GDP nearly tripled from \\$2 trillion to roughly \\$5.6 trillion](#). But once the boomer generation kicked in with two people per family unit generating two household incomes, the next 28 year period saw real GDP nearly tripled again from \$5.6 trillion to \$14.5 trillion—2.5 times the increase of the previous period. By the time boomers first started retiring in 2009, GDP had hit a spectacular \$15.3 trillion.

How did this growth affect regular families? Median family income grew modestly from \$5K to \$14K between 1955 and 1975. It then soared to \$56K (a stunning \$42K increase) in the next 20-year period ending in 1995. In other words, as boomers (many of them dual-income earners) hustled industriously through their prime earning years, median family income grew five times as much as it did in the previous 20 years.



Historical median income using alternative price indices: 1967 to 2019

Median family income adjusted for inflation. Even with the setback of the recession, the pattern of growth has mostly ranged from steady and sustained to sharp and steep.

Source: US Census Bureau, Current Population Survey, 1968-2020 Annual Social and Economic Supplements (CPS ASEC)

The result is an enormous amount of wealth.

As of today, the [average net worth](#) for a boomer household is \$1.2 million, making it the wealthiest generation in the history of the world. We don't mean to suggest that every single individual in this cohort has made this much. But broadly speaking, this generation has amassed a lot of wealth.

The combination of significant wealth with low birthrates may mean that [a major transfer of wealth is on the horizon](#). With fewer offspring to divide up an inheritance, the children of highly educated, high-earning baby boomers can expect to receive that average \$1.2 million more or less intact when their parents die.

What are the consequences of such wealth? We will consider one particularly unfavorable consequence in Chapter 2.

The tide is going out

These enormously blessed children of the baby boomers—Gen Xers and millennials—would normally replace their parents in the labor force...if there were enough of them, but as we've seen, there aren't.

The recent history of our labor force amounts to a slow-moving tide. After decades of high tide, we've become accustomed to it. But the tide is going out. The exit of boomers from the workforce is not staggered, but en masse, and it's already leaving companies scrambling to fill people gaps. When the tide fully recedes, the productivity losses will be extreme. The [Economic Policy Institute projects](#) that by 2030, a middle class family's after-healthcare income will be down by 14%. Meanwhile, the [World Economic Forum](#) estimates people spend over 37% less in retirement. A decrease in aggregate demand coupled with a labor supply shortage amounts to a dire prediction for GDP.

In the next chapter, we'll discuss another reason the children of baby boomers aren't filling their parents' shoes: lack of motivation and a shift in career ideals and work ethic, resulting in record-low LFPR among prime-age men in particular.

CH 2.

WORKFORCE PRESENT

The Remarkable Erosion of the Prime-Age Male Workforce

TAKEAWAYS

» 2.4 million women left the workforce from February 2020 to February 2021—a development that has overshadowed another mass exodus. Men have been disappearing since the 1980s.

» The prime-age male workforce (ages 25-54) plunged from 94% in 1980 to 89% in 2019. That 5 percentage-point drop represents over 3 million missing workers when compared to the 94% participation rate. When compared to a hypothetical 100% rate, it represents nearly 7 million.

» Millennials are expected to inherit an estimated \$68 trillion from their boomer parents by 2030, making them the wealthiest generation in history. The wealth created by boomers in general has made millennials less motivated to seek careers of their own.

» The opioid epidemic is a major culprit in siphoning prime-age men off the labor force. In 2015 alone, a staggering 860,000 prime-age men were absent from the labor force due to opioids.

» In 2014, for the first time since 1880, more men 25-34 years old were living with their parents than with a spouse.

» Males increasingly prefer part-time over full-time work. The number of prime-age men willingly opting for a part-time job jumped from 6 million in 2007 to nearly 8 million in 2019.

Meet the Millennials

Introduction

In the last chapter, we considered the enormous size of the baby boomer generation and the fantastic wealth they created. In this chapter, we will consider what happened when the subsequent generations (Gen Y, millennials in particular) were neither numerous nor motivated to replace boomers in the labor force.

2.4 million women left the workforce in one year

First, let's consider an alarming phenomenon that is making headlines and turning heads: women are leaving the workforce by the millions.

Back in January 2020, women were in a slim majority for the second time in US history, accounting for [just over 50%](#) (50.04%) of the national workforce. But COVID has changed all that. From February 2020 to February 2021, [2.4 million women](#) separated from the labor force, compared to 1.8 million men—a difference of 600,000. In January 2021 alone, [275,000 women left the workforce](#), compared to 71,000 men.

A primary cause behind this widespread retreat is that several major industries employing a majority of women—service, retail, travel & tourism—were also the first to be shut down or obliged to curtail business during COVID. Other reasons include pure necessity (women leaving to take care of their families once schools pivoted to distance learning) or burnout (women exhausted from juggling both families and work).

The loss of women from the labor market is indeed shaping up to be a dire trend. But even more disturbing is a stealthier long-term trend that has been missing from much of the national conversation for the past 40 years: where have all the men gone?

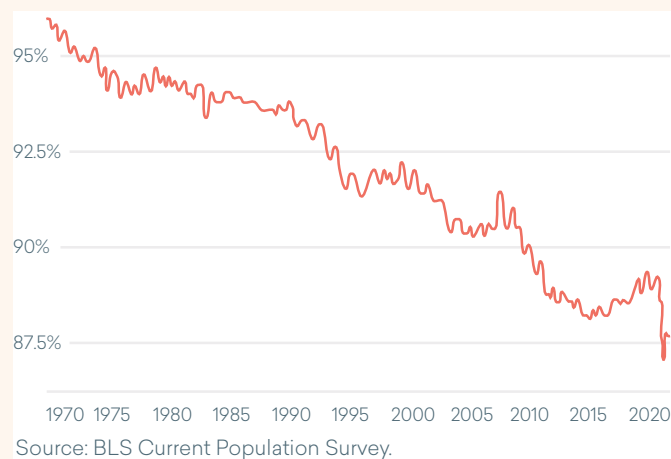
Male workers: AWOL since 1980

A revolving door began spinning on the workforce in the 1980s: women in, men out—especially in the generations following the baby boomers.

In 1980, the prime age male workforce (ages 25-54) made up 38% of the workforce. But by the fourth quarter of 2019, nearly 40 years later, that same prime age male workforce had dropped to just 34% of the workforce.

The chart below illustrates the drastic decline in the LFPR for prime-age men. The dip in male LFPR was already underway in the 1970s. Then between 1980 and 2019, it jumped off a cliff. In 1980, the LFPR for prime-age men was right around 94%. By 2019, it had plummeted to 89%. This drop represents roughly 2.6 million prime-age men no longer actively working or searching for a job.

Prime-age male labor force participation rate plummeted from 94% in 1980 to 89% in 2019



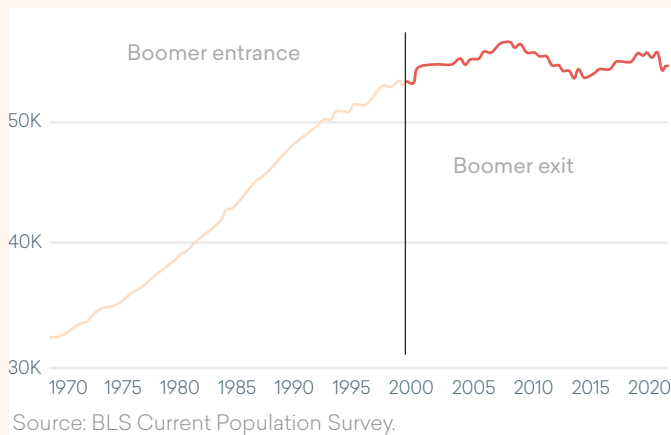
Of course, men naturally made up a shrinking percentage of the total workforce as [women flooded the ranks](#) starting in the 1950s, but the trend we're observing here isn't a matter of men comprising a smaller slice of the pie. This is a matter of men opting out of the pie. Gen X, millennial, and Gen Z men increasingly don't work, period. And yes, the decline of the overall number of males in the workforce since 1980 is somewhat due to the fact that male boomers have moved into the next age

bracket. However, this doesn't change the fact that the overall participation of prime-age men is tanking.

Here's a grim angle on the same problem. The last male group to grow in the labor force was baby boomers. In the chart below, note how male LFPR catapults as boomer men enter the market from 1970s to 2000, but stagnates as boomers begin to retire.

Baby boomer men were the last male group to grow in the labor force

As boomers began exiting the labor market, the total number of prime-age men in the workforce did not



grow at all for 16 years, from 2004 to 2020. However, the number of prime-age men not in the labor force [swelled by an astonishing 70%](#). What this means is that even though millennials in particular now [outnumber living baby boomers](#), more and more millennial men are, for one reason or another, opting out of work.

The question is, why?
We will consider three primary reasons:

- Boomer wealth and delayed responsibility
- Opioid epidemic
- Fundamental attitude shift away from full-time work and towards part-time work (and video games)

The impact of boomer wealth: delayed responsibility

As we saw in Chapter 1, the work ethic of 76 million baby boomers begat incredible economic wealth. On top of being part of an enormous labor force, the [majority of married boomers](#) were also dual-earner couples. This meant two people generating two household incomes for the same family. By 1995, the large female boomer population was 33-49 years old (prime working years) and, combined with their husbands' incomes, earning the [largest increases in household income](#) in the recorded history of the world.

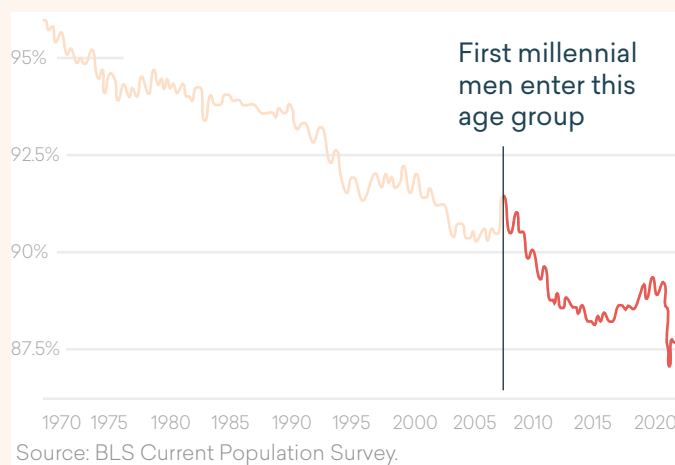
WHAT WAS THE IMPACT OF ALL THIS WEALTH ON THE CHILDREN OF BOOMERS?

Let's back up a minute to get the big picture. The maximum earning years for households are between ages 45 and 54. For boomers, this would have spanned the years of 1991 to 2018 with the peak occurring somewhere between 2002 to 2007. Boomers' children would have been in their early 20s to mid 30s in that time frame.

What this means is that as boomer parents flourished in their peak earnings years, their adult children did not technically need to work in order to ease the drain on the household. The dual-income-earning parents were already making enough money. In fact, millennials are expected to inherit an estimated \$68 trillion from their boomer parents by 2030, which will make them [the wealthiest generation in history](#).

One of the blessings of such wealth is also a curse: the easy slip into delayed responsibility. A full 13% of millennials [did not get their first job](#) until they were over 20 (with men having a higher average age than women), compared to just 8.9% of Gen X and 6.3% of boomers. The LFPR for men ages 25-34, already in slow decline as boomers began aging out, took a shocking dive as millennial males entered that age group. The LFPR went from 93% around 2007 to 88% in 2014:

LFPR for males ages 25-34 tanked as soon as millennials hit those ages



The abundance of boomer wealth also moderated the need and motivation for millennials to move out of the nest. In 2014, for the first time since 1880, more men 25-34 years old were [living with their parents](#) than with a spouse. For 25-29-year-olds, that percentage was an astounding 25%.

When thousands of men don't get a job or leave Mom and Dad's, the shockwaves are personal, not just national or economic. Men who delay getting a job also delay critical life milestones such as marriage, children, and home-ownership. According to the Census Bureau, the average age of marriage for men has moved from 23 years old in 1960 to [30 years old in 2019](#). As for having kids, the vast majority of men are [postponing children to their 30s](#) with the average of first time [fathers hitting 31](#), up from 27 in the early 1970s. The average age to purchase a first home went from 28 in the 70s and 80s to [34 years](#)

[old as of 2020](#), while the [median age](#) soared from 31 years old in 1980 to age 47.

Sidenote: A common explanation for millennials' delay in buying a first home is the [\\$1.7 trillion in student loan debt](#) shared by approximately 44.7 million borrowers. Debt is indeed a ball and chain for many young Americans (and let's not forget that the median inflation-adjusted price of homes [ballooned by 39%](#) between 1970 and 2019). But the fact remains: the LFPR itself for millennial men is plunging.

With male LFPR declining so drastically, college debt and home prices alone cannot be blamed as the only villains forcing millennial men to postpone buying a home.

The truth remains: men today aren't working as much as their boomer parents.

The opioid epidemic is stealing prime-age men from the market

Another factor stealing men away from the labor market over the past two decades is prescription opioid abuse. Opioids are used by many for legitimate pain management, but the US has been overrun with addiction, as evidenced by the fact that some [90 Americans die](#) every day from opioid overdose. It is manifestly impossible to sort between abusers and legitimate users in the statistics below; nevertheless, considering that [nearly 30% of patients misuse their prescriptions](#), we can use the following numbers to conclude that opioid abuse is a major culprit in siphoning men off the labor force.

The opioid conflagration began around the turn of the millennium. From 1999 to 2010, [US sales of opioid painkillers quadrupled](#). In fact, in 2012, there were enough opioid prescriptions for [every single American adult to have their own bottle of pills](#), according to the Centers for Disease Control and Prevention. And as the use of painkillers skyrocketed, the misuse was not far behind. In 2019, an estimated [9.7 million Americans](#) age 12 or older misused prescription painkillers.

The consequences of opioid abuse aren't just hospitalizations and tragic deaths, but also a [huge decline in labor force participation](#)—particularly among prime-age men. In an extensive 2019 study, researchers Dionissi Aliprantis and Mark E. Schweitzer discovered a strong link between [opioid prescription rate and labor force participation](#) for both men and women.

For prime-age men in particular, a 10% higher prescription rate in a particular region was associated with a 0.15-0.45% decrease in the LFPR. In fact, the study estimated that in certain US counties, solving the opioid epidemic would increase the LFPR for prime-age males by over 4 percentage points.

Further, a 2018 study by the American Action Forum discovered that the spike in opioid use between 1999 and 2015 (256% increase per capita) caused the national LFPR for prime-age men to [drop by 1.4 percentage points](#). This accounts for a full 40% of the decline in LFPR for prime-age men during the same time frame. In raw numbers, this decline means that in 2015 alone, a staggering 860,000 prime-age men were absent from the labor force due to opioids.

ATTITUDE SHIFT: PART-TIME WORK & VIDEO GAMES

Much has been written in defense of millennials' [work ethic](#), their [desire for work-life balance](#), their [preference for a clear career path](#), their love for [flexible schedules](#), and even their [sense of entitlement](#). But here, we want to focus on the connection between boomer wealth and the low LFPR in millennial men in particular.

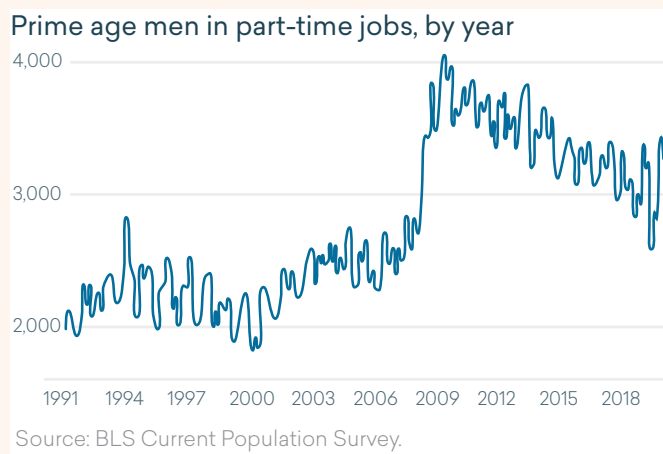
With boomers' wealth creating an affluent life for large numbers of the following generation, their children's attitude towards work naturally shifted. It would have been highly difficult to resist. Enabled by significant wealth, millennials could afford not to work—or to work significantly less than their parents. We will examine this attitude shift for prime-age men in two areas: the drift away from full-time work

towards part-time work, and the huge increase in hours spent playing video games.

MILLENNIALS WANT LESS FULL-TIME WORK, MORE PART-TIME WORK

A notable trend in the past decade (2009-2020) is the flight of prime-age men to part-time work.

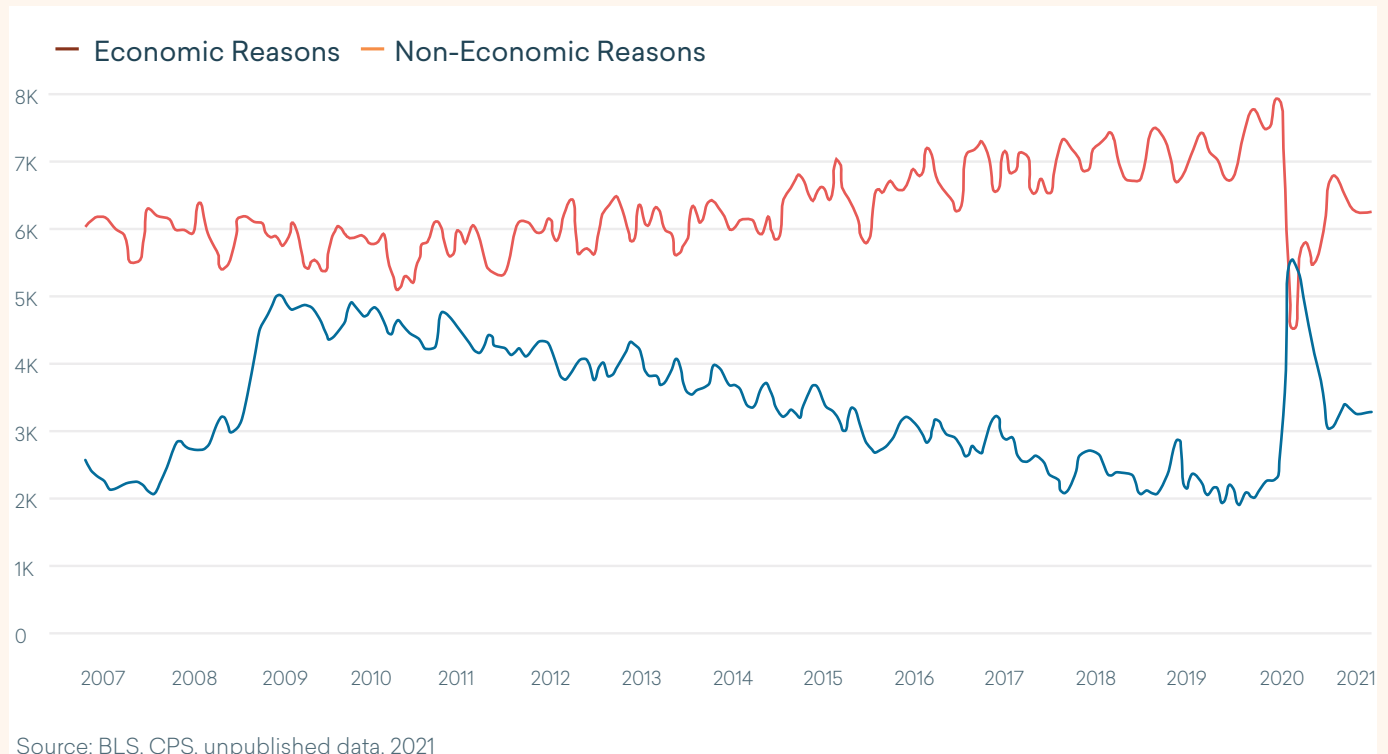
The 2008 housing crisis pushed prime-age men from full-time work into part-time work



One of the initial reasons that significant numbers of men moved into part-time work around 2009 was that they were forced to. The Great Recession of 2008 erased 4.5 million largely full-time jobs from the male-dominant construction and manufacturing industries. Many of the only available jobs were in restaurants or retail establishments, where average weekly hours are typically part-time even in a healthy economy. Thus, huge numbers of prime-age men [opted for these 20- to 30-hr/week jobs](#) simply because there was nothing else at the time.

The problem is that even as the US recovered from the recession and unemployment rates sank to their [lowest levels in 50 years](#), prime-age men didn't race to return to full-time work. As the following chart demonstrates, the number of prime-age men willingly opting for a part-time job jumped from 6 million in 2007 to nearly 8 million in 2019.

Men: part-time by reason



This was particularly prevalent in the 21- to 30-year-old male age group which, by 2015, was working [12% fewer hours](#) on average than it had been in 2000. A shocking 15% of these men had not worked a single week in 2014.

BOTH MILLENNIALS AND GENERATION Z LOVE THEIR VIDEO GAMES

Why the dramatic shift to part-time work, even during a time defined by prosperity and opportunity? One short and surprising answer is our second topic: [video games](#). Yes, really.

According to [NBER research](#), the decrease in hours worked for men ages 21-30 exactly mirrored the increase in video game hours played. On average, males ages 21-30 worked over [200 fewer hours](#) in 2015 than they did in 2000 (a 12% decline). They simultaneously upped their leisure hours, 75% of which were spent playing video and computer games. Many of [these men](#) do not have a bachelor's degree, and the data shows they are postponing marriage, child rearing and home buying until their 30s.

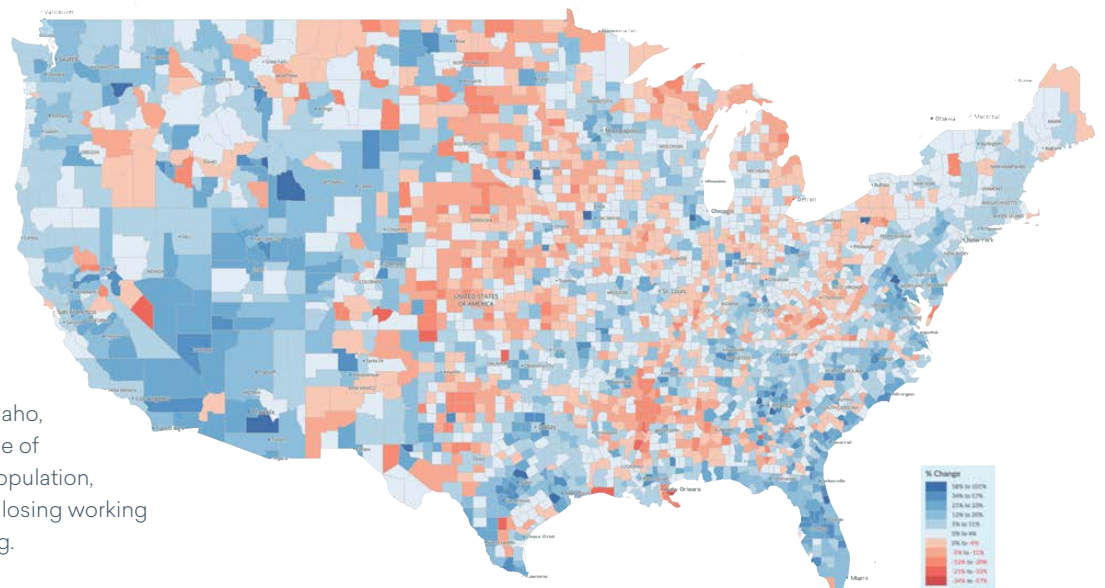
Conclusion

For practical ways to encourage not only prime-age men but workers in general to rejoin or remain in the labor force, see our suggestions in Chapter 5. In this next chapter, we will consider an even bigger problem than the declining LFPR of prime-age males: the imminent shrinking of the US population.

In the maps below, we highlight some of the dramatic changes that have occurred over the last two decades, both in the population of working-age adults, and in the population of children under fifteen. Overall, the maps show historic population centers—the coasts especially—losing young people, while the Mountain West, Southwest, and some parts of the South and Midwest make relative gains. And in just the last ten years, losses of working-age population across the board have accelerated dramatically.

Percent change in working-age population by county between 2001 and 2011

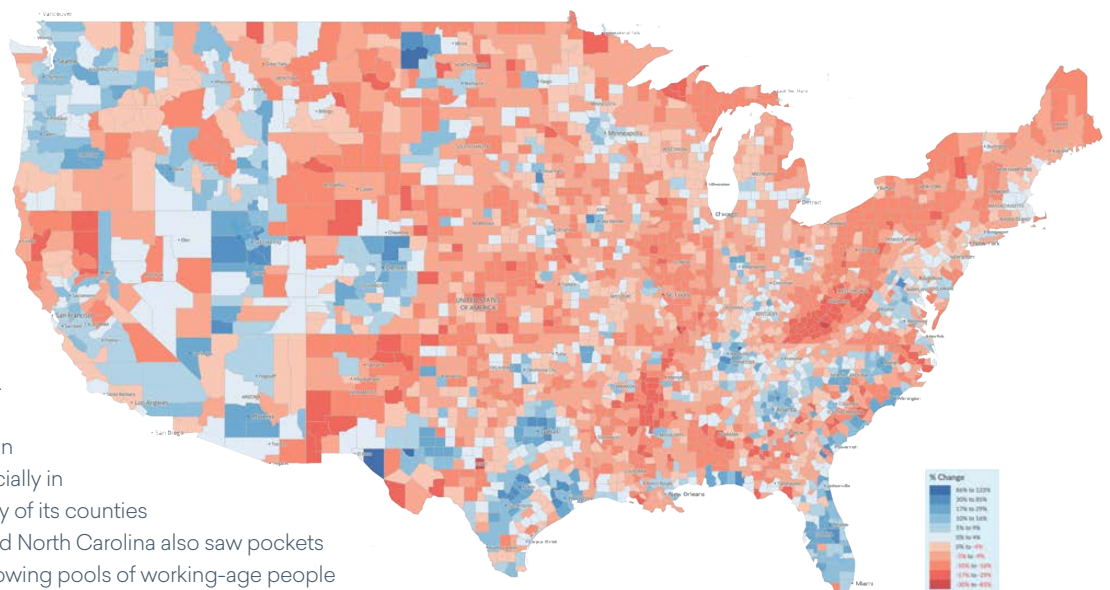
Notice how the worst losses are relatively localized to the Midwest and South. Almost every county on both coasts saw working-age population growth: between 2001 and 2011, rural areas were becoming increasingly elderly, while young people concentrated in prosperous urban centers. Most counties in Western states also saw their working-age population grow, although some counties in Oregon, Idaho, and Nevada suffered losses. Texas, one of the largest states in terms of overall population, was a mixed bag, with some counties losing working population and some counties gaining.



Source: Emsi labor market analytics

Percent change in working-age population by county between 2011 and 2021

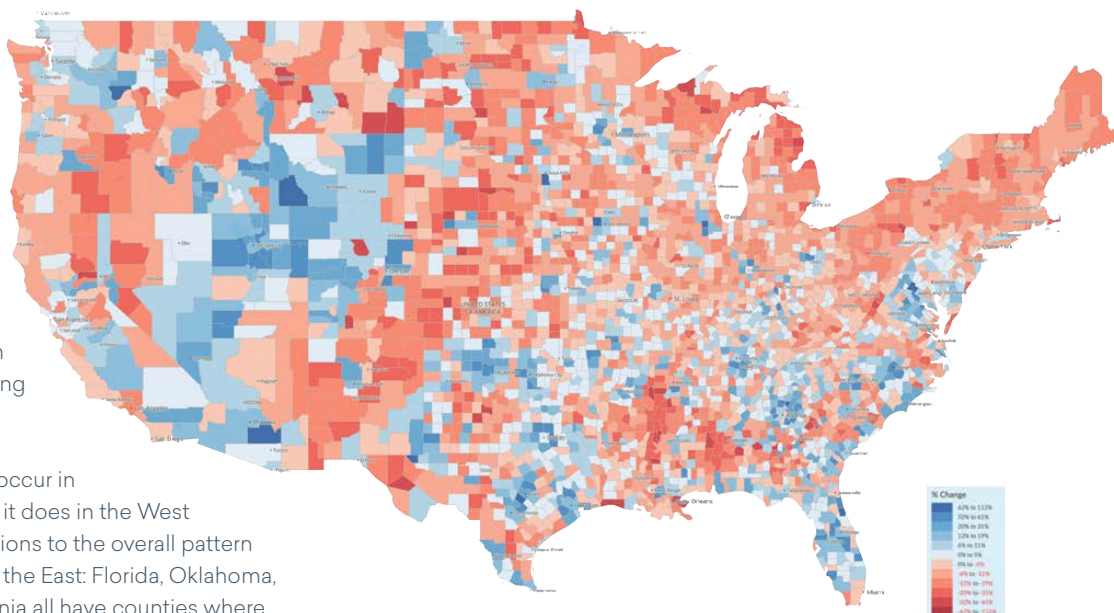
Note the stark contrast with the same map from only a decade earlier. Losses that were regionally concentrated have become nearly universal in the intervening 10 years. Economically powerful coastal regions suffered much more than they did in the previous ten years. In fact, California's coast is an almost completely unbroken stretch of working-age population loss. Interestingly, Florida, long considered by many a retiree colony, is an exception to these coastal patterns. Florida, especially in the southern part of the state, saw many of its counties gain working-age population. Texas and North Carolina also saw pockets of growth, but the largest areas with growing pools of working-age people were out west: counties in Washington, Oregon, Idaho, Utah, and Nevada. If the story of 2001-2011 was the hollowing out of America's heartland, 2011-2021 saw America's traditional hubs of economic and tech power lose young people in droves.



Source: Emsi labor market analytics

Percent change by county in the under-15 population between 2001 and 2011

Only parts of the Mountain West and Southwest show significant unbroken stretches of growth. While working-age population was relatively stable in many counties during this time frame, the share of children under 15 was dropping rapidly all across the country. In this map, you can see the workforce losses coming 10 years down the line: a lack of children under 15 means the same lack of young working adults 10 years later.

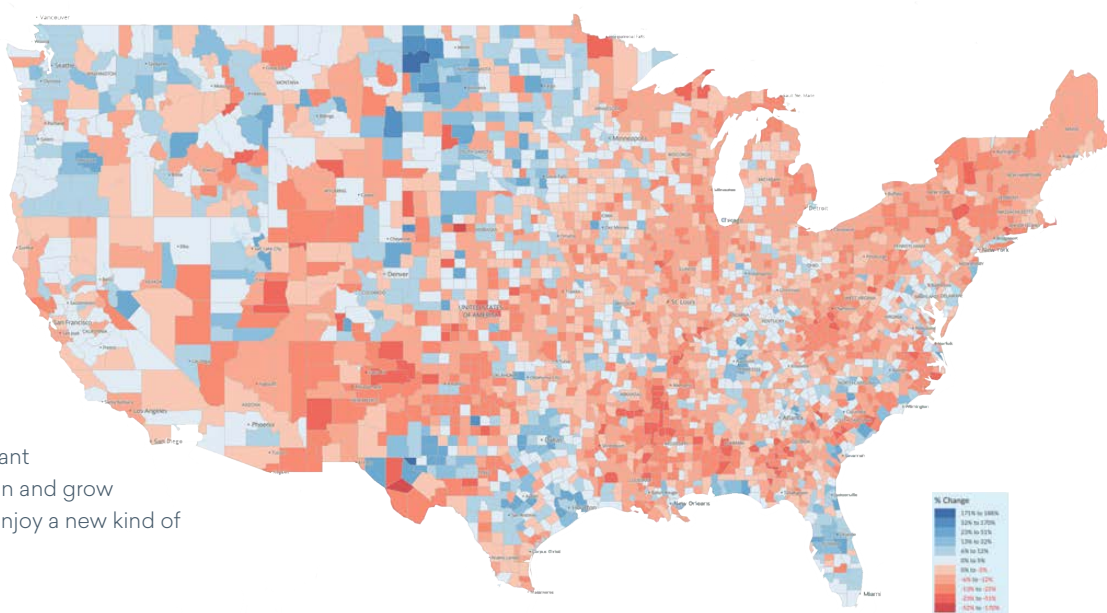


East of the Rockies, growth tends to occur in pockets rather than wide swathes, as it does in the West and Southwest. Still, there are exceptions to the overall pattern of declining childhood population in the East: Florida, Oklahoma, Texas, North Carolina, and Pennsylvania all have counties where the percentage of children is growing, rather than shrinking.

Source: Emsi labor market analytics

Percent change by county in the under-15 population between 2011 and 2021

In the last decade, the West and Southwest have lost a large part of their advantage, while the upper midwest has made gains. However, the pockets of growth on the East Coast and the South have mostly shrunk—with the exception of Texas and Florida, notable outliers. If the overall share of children as a percentage of the population continues to drop over the next 10 years, the ability of these outliers in the West, South, and Mid-West to retain their growth trajectories will be an important issue. Communities that can maintain and grow a population of young people may enjoy a new kind of competitive advantage.



Source: Emsi labor market analytics

CH 3.

WORKFORCE FUTURE

Living Below 2.1

TAKEAWAYS

- » Since 1971 the fertility rate in America has been below the replacement level of 2.1 births per woman, which means millions of Americans will be absent first from the classroom and then from the labor market—because they were never born.
- » US population growth has slowed and is [projected to begin shrinking](#) by 2062.
- » The combination of low fertility, low workforce participation, and longer lifespans means two-thirds of the US population could be financially dependent on the remaining one-third by the year 2100.

So far, we've considered the current talent shortage from two angles. We've covered the baby boom, which created a highly prosperous economy, but we've also seen that the following generations have been neither numerous nor motivated enough to replace boomers as they retire. Both of these factors have contributed to (and will continue to impact) America's struggle to find enough people to fill open jobs.

This leads us to our third and most sobering angle: the declining workforce of America's future. In this chapter, we consider the exact nature of this imminent people shortage in the US and the 50-year history of America's baby bust.

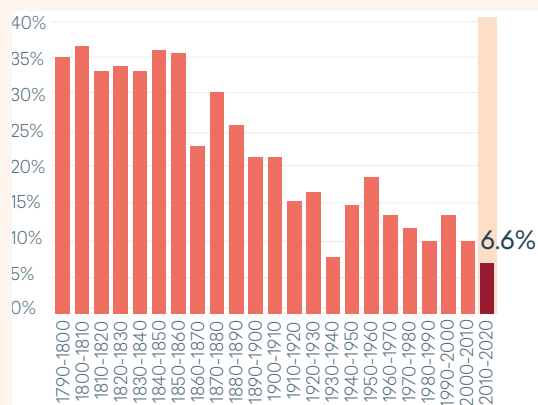
A 6-million worker deficit will lower living standards for everyone

In early 2018, Korn Ferry predicted that by 2028, the US can expect to see a [deficit of 6 million workers](#), while 85 million jobs go unfilled around the globe. These shortages are more than just a challenge for HR directors or CEOs. These shortages will affect quality of life for everyone.

When a shipping company is short tens of thousands of truck drivers, it means packages arrive late and essential goods go missing from grocery store shelves. When hospitals can't find enough nurses, life-saving treatments get delayed, and short-staffed, sleep-deprived medical teams make critical mistakes. When corporations can't fill high-tech security roles, everyday people are left vulnerable to data breaches and cyber attacks. Without enough people working to provide the goods and services we've come to expect, prices go up and the speed and quality of service goes down.

As we've seen, low labor force participation is part of our talent shortage problem. But a bigger demographic trend is driving shortages as well.

US population growth by decade: 1790 to 2020 (estimated) censuses



*April 1 2020 population is calculated by pro-rating the annual growth rate from July 1, 2019 to July 1, 2020 through April 1, 2020.

Source: William H. Frey analysis of US decennial censuses 1790 to 2010 and annual Census Bureau Population Estimates released December 22, 2020

Last December, William Frey of Brookings reported that the US population growth rate from 2019 to 2020 was a [staggeringly low 0.35%](#)—the lowest recorded growth rate of any year since 1900, and probably the lowest since the birth of our nation. Even small changes in growth have big implications. Increasing the rate of growth by just one-tenth of 1% (from 0.35% to 0.45%) between 2019 and 2020 would have meant an additional 327,000 people. But the national rate of growth generally continues to slow. 2010-2020 represents the lowest decade of population growth in US history.

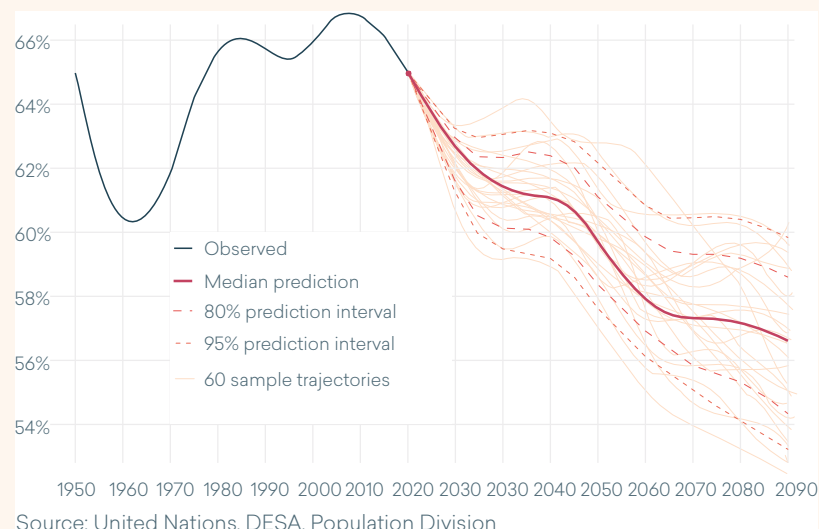
Looking further into the future, the [UN projects](#) that the number of working-age people in the US will fall below 60% of the total population by the year 2100, and could drop to as low as 53%. The last time the working-age population dropped near 60% was during the baby boom, when the dependent population was primarily children. This time, the majority of the country's dependent population will be over age 65.

Using the UN's medium scenario, the [age dependency ratio](#) in the US is projected to be 77 by the year 2100. That's 77 people of dependent age (under 15 and over 65) for every 100 people of working age. But keep in mind, not all people of working age will actually have jobs. (As we saw in Chapter 2, LFPR among prime-age people has already dropped significantly.) What this means is that even if workforce participation reverts to our 20-year high, current demographic trends will leave almost two-thirds of the US population dependent for financial support on the remaining one-third by 2100. Given the steep cost of care for elderly dependents, the financial burden on the working-age population will be immense. Perhaps impossible.

The US has not yet had to deal with a shrinking total population (as is already afflicting Europe, Russia, and Japan), but we need to wake up to reality: our population growth has slowed and is [projected to begin shrinking](#) by 2062. The current struggle to find talent is not simply a matter of too few people with the requisite skills to fill open roles. It is becoming a matter of simply too few people.

How did we get here?

United States of America: percentage of population aged 15-64 years



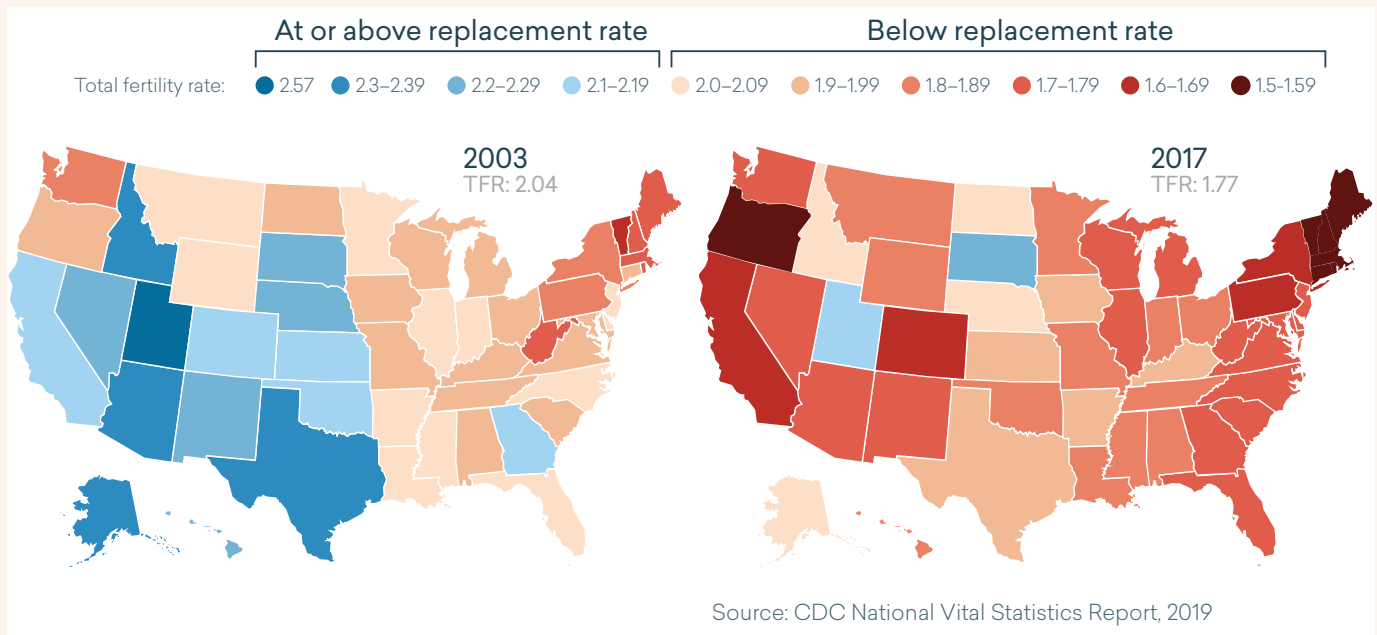
50 years of baby bust

Millions of Americans will be absent first from the classroom and then from the labor market because, to put it bluntly, they were never born.

We briefly discussed total fertility rate (TFR) in Chapter 1. As a reminder, in order for the US population to replace itself, the TFR needs to equal 2.1, or 2.1 children per 1 woman. When the TFR stays at 2.1, one child is born to replace every person now living. The population doesn't grow, but it is at least replaced.

The problem, as we mentioned earlier, is that America's TFR has been far below 2.1 since 1971. In 2017, the TFR in the US had fallen to 1.7—down from 3.7 in 1960. Data compiled from 32 US states indicates that in 2020 alone, the birth rate [fell more than 4%](#). This means that fewer and fewer young people are rising through the ranks to attend college or enter the workforce.

From 2003 to 2017, the US total fertility rate (TFR) fell from an average of 2.04 live births in a woman’s lifetime to 1.77. The number of states with a TFR above replacement rate (2.1) dropped from 15 to 2: Utah and South Dakota.

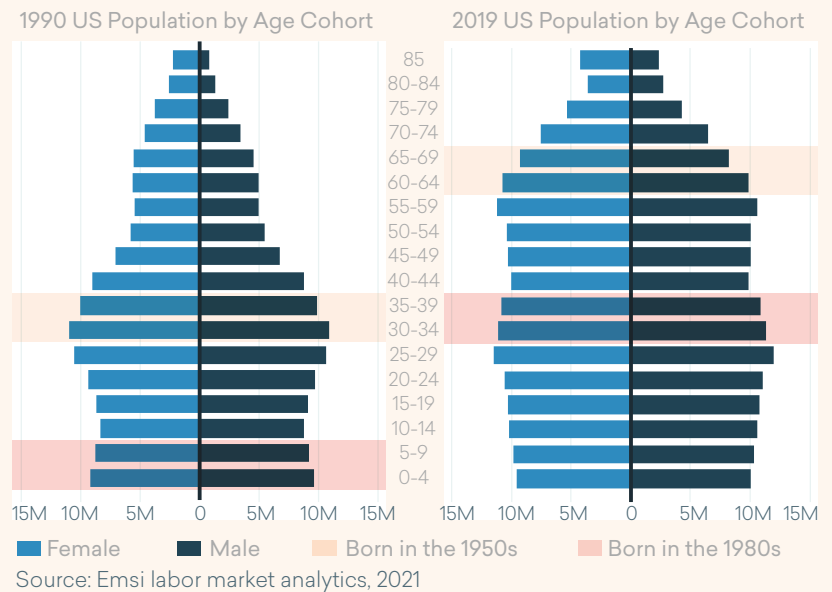


Fertility numbers vary by state, but the trend toward fewer and fewer children per household does not. The maps below illustrate the dramatic decline from 2003 to 2017.

In 2003, nearly a third of US states had fertility rates above 2.1. But in just 14 years, only two states (Utah and South Dakota) had fertility rates above the replacement level. And these numbers continue to drop. States like Oregon and much of New England have fertility rates closer to that of Japan.

As fewer children are born and greater numbers of Americans live into their eighties and beyond, the traditional age pyramid (where younger people outnumber older people; see the chart on the left) now resembles an age bubble (with older outnumbering younger; see the chart on the right).

Low fertility has changed America's ideal youth-heavy population “pyramid” into a middle-aged balloon



A country with a pyramid-shaped age distribution is one with a large up-and-coming young population. In the US, the pyramid-shaped age distribution of the past contributed to boomer-driven economic prosperity (ironically, a crucial factor allowing the boomers to amass such unprecedented wealth was the

decision to have fewer children than their parents, which partially enabled more women to join the workforce and contribute to household income, as we discuss in item 5 below.).

No single factor is responsible for the global drop in fertility, and no single factor is likely to turn it around. Moreover, not all the factors involved can be painted as an unqualified evil that it would be universally beneficial to eliminate, and even fewer have an obvious short-term solution. Our goal in identifying contributing factors is not to outline a simplistic path to reversal, but to foster conversations about the following:

- The long-term factors that are here to stay and what strategies can best mitigate the negative consequences
- The short-term measures that will allow us to cope with what can't be mitigated at this point.

Plans for reversing the current demographic trends are not within the scope of this paper, but outlining some of the contributing factors can help us understand the complexity of the matter. Researchers point to a range of considerations that affect the decision to have a child—some economic, some religious, some personal. These include the following factors:

INDUSTRIALIZATION

In pre-industrial societies, children could quickly become financial contributors to their families, working as hands on the family farm for example. But with mechanization, industrialization, and the introduction of child labor laws, children gradually ceased to be economic assets. In the modern economy, kids are now seen as liabilities, especially in

their younger years. Raising a child to adulthood [now costs American parents close to \\$234,000](#)—roughly the cost of buying a house.

URBANIZATION

With fewer hands needed to run family farms, populations shifted from rural areas toward cities. Historically, [urban areas tend to have lower fertility rates](#). Reasons may include tighter living conditions, higher cost of living, and changes in cultural values between city and country.

SECULARIZATION

Religion plays a well-documented role in boosting fertility. One study found that those with strong religious affiliations have [.8 more children than their non-religious peers](#). According to a 2021 Gallup poll, membership in American churches, synagogues, and mosques has plummeted over the last 20 years, from [70% in 1999 to 47% in 2020](#). As religion declines in the US, the religious incentives to procreate have declined with it. Yet even among religious groups with historically high birth rates, [fertility has dropped over time](#).

DECLINE AND DELAY OF MARRIAGE

[Married people have more children](#) than unmarried people, and [marriage rates fell from 72 to 50%](#) between 1960 and 2016. At the same time, among those who do marry, the [average marriage age rose](#) from early 20s in 1960 to 28 for women and early 30s for men by 2020. Delaying marriage reduces the number of childbearing years remaining for married women. This is one of the reasons that women in the US end up having [fewer children than they would like](#). During 2020, marriage rates, already at an

[all-time low](#), dropped even further. In Florida alone there were [28,000 fewer weddings](#) last year than there would have been had 2019 marriage trends continued. Will there be a flood of weddings once everything calms down? Hard to say.

WOMEN'S EDUCATION AND EMPLOYMENT

From a global perspective, the [inverse relationship](#) between women's education and fertility rates is well documented. As education and career opportunities are made available to women, they frequently choose to delay or avoid marriage and motherhood in pursuit of other goals. However, this does not mean that education has to be at odds with fertility. In the United States, the highest birth rate is among [mothers with a graduate degree](#)—nearly double that of mothers with less than a high school education.

DEBT AND DELAYED COLLEGE ENROLLMENT

College enrollment has, until very recently, been at record highs. Extending education further into adulthood tends to delay childbearing since students prefer to put off marriage and starting families until after graduation. [Student debt](#) is also at historic highs, making the financial commitment of parenthood more intimidating.

UNEMPLOYMENT AND ECONOMIC UNCERTAINTY

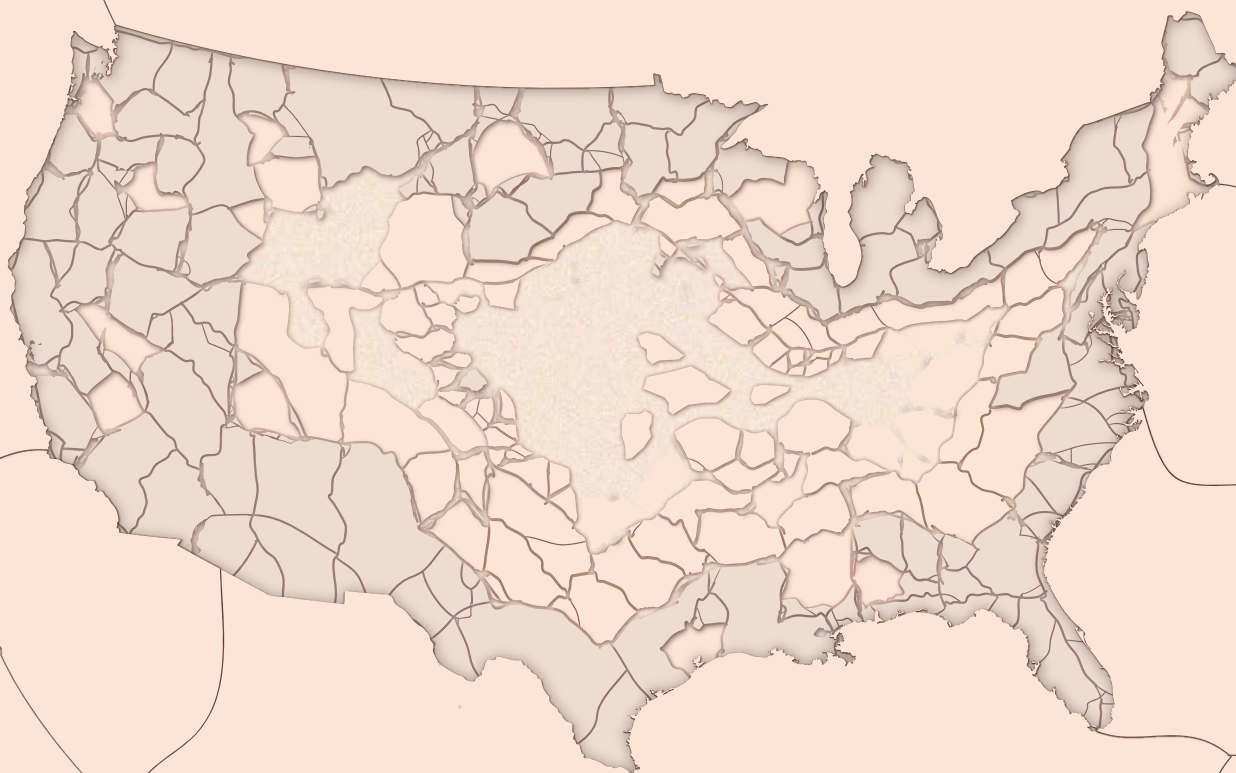
Low fertility often coincides with recessions. Given the long-term costs of raising children, financial stability is a major factor in the decision to grow a family. Millennials [cite financial worries](#) as a primary reason for postponing a variety of milestones, including having children. Unemployment is one part of that equation. Wellesley College economics

professor [Phil Levine calculates](#) that every 1% drop in the employment rate brings a 1% drop in births.

Initial reports following the economic crisis of 2020 bear this out. By December 2020—eight months after unemployment soared to terrifying heights—[births were already down as much as 30%](#) in some US states over the same period in 2019. This supports [earlier projections](#) from Brookings forecasting as many as 500,000 fewer US births in 2020 than the already declining number expected before COVID. As The Wall Street Journal [reports](#), “The longer a crisis lasts, the higher the chances that potential births aren't just postponed but never happen, say demographers.” With birth rates already near record lows in 2019, a significant COVID-related baby bust would push the US even further toward a demographic drought.

The list could go on. Additional reasons for preventing or postponing childbearing include political instability, housing costs, lack of childcare, increased access to abortion and contraceptives, environmental concerns, and cultural pressures, among others.

CH 4.



WORKFORCE FUTURE

The Grim Implications of Living Below 2.1

TAKEAWAYS

- » Shrinking populations in Germany, the UK, and France alone will mean over \$1.2 trillion in lost revenue by 2030.
- » The US faces the shortfall of 8.5 million workers in years to come, which will cause both higher education institutions and businesses to desperately compete for recruits who simply don't exist.
- » The US stands to lose \$162 billion annually due to talent shortages.

In this chapter, we will consider why a declining population spells trouble for the national economy and how it could affect higher education and employers in particular.

A declining population spells serious trouble for the economy

Without population gains through immigration (an issue we will address more fully in chapter 5), any country whose TFR drops below 2.1 will eventually face the social, political, and economic challenges of an aging population, a declining education system, and a shrinking labor force.

A declining population forecasts a [declining economy](#). Fertility rates determine the future number of working-age individuals, and as fertility rates drop, the US faces the prospect of depleting her greatest economic resource: her people. Due to our aging population, we can expect the expenditure on pensions, healthcare, and entitlement programs to rise as our economic output falls. In other words, to take care of aging boomers, withdrawals from Social Security and Medicare will grow, even as the tax base to fund them shrinks.

But more is at stake than tax-funded programs for retirees. How serious is the problem of a declining population? No crystal ball can tell us all the details of the future that's in store, but we can get a glimpse

by looking to regions with populations that have already begun to shrink.

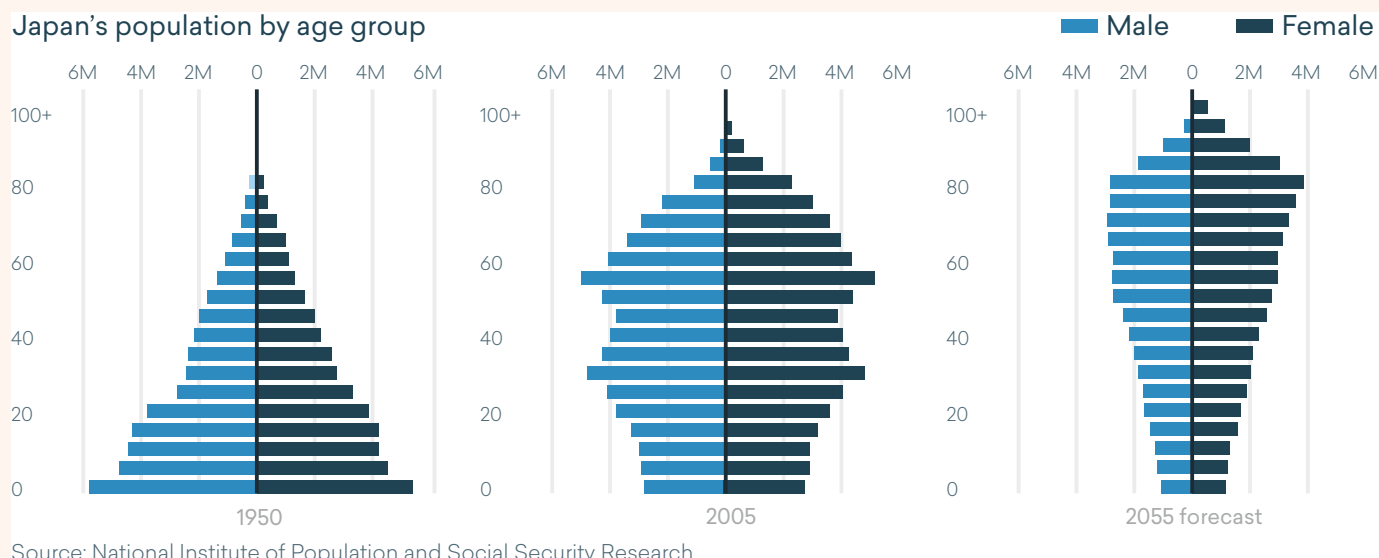
Japan, whose demographic trends are roughly [10-15 years ahead](#) of the US, has also witnessed its population distribution shift from a pyramid to a balloon. With a TFR that has sat well below 2.1 for the last 50 years, Japan's population balloon is rapidly losing air—a sign that her economic party may soon be over.

After decades of low fertility, Japan has seen its population shrink, [its schools close](#), its [universities struggle](#) to find students, its [debt-to-GDP ratio](#) climb, and its elderly people [fend for themselves](#).

Europe is another example of the challenges the US can expect in the coming decades. Europe is now the oldest continent and the first to have a shrinking population overall. Within 15 years, Europe is set to have [50 million fewer people](#) of working-age than it had just 10 years ago. A [2018 report](#) projects that by 2030, talent shortages in Germany, the UK, and France alone will result in a combined \$1.2 trillion in lost revenue.

Both Japan and Europe can provide real-time insights into the social and economic challenges brought about by a shrinking and aging population. And the US should be taking notes—because we may not be far behind.

Japan's age distribution is a balloon that is losing air. The US is only 10-15 years behind.



The sansdemc will affect higher ed, employment, and the US economy

1. HIGHER EDUCATION

With fewer children born in the US, K–12 enrollment was already projected to [fall by 8.5%](#) before 2030. But after the events of 2020, enrollment is likely to slip even lower.

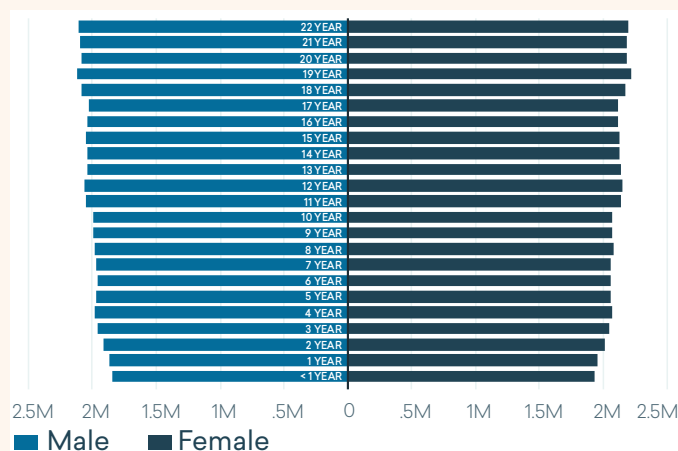
Fewer K–12 students also means fewer young people graduating and moving on to college. [A December 2020 report](#) from Inside Higher Ed predicts that the mid-2020s will see declining high school enrollments and class sizes, especially as the post-2008 birth dearth hits the upper grades.

When fertility rates were high and numbers of young adults were on the rise in the 1960s and 70s (see Chapter 1), college enrollment saw a tremendous upswing. The boomer generation created unprecedented demand for higher education. And even after population growth slowed, increased numbers of young people pursued postsecondary education as the means to a successful career. But that upward trend has peaked and is now moving in reverse. US colleges have [lost more than 2 million students](#) in the last decade.

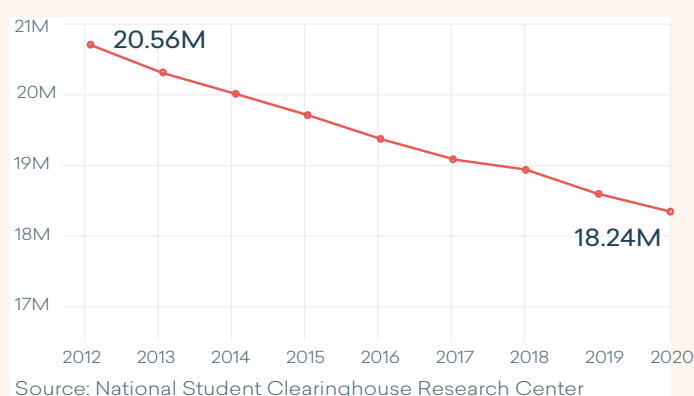
And then came COVID. As we saw in the introduction, higher ed lost [nearly half a million students](#) last year. Meanwhile, [EAB reports](#) that delayed college plans, combined with the spike in high school dropout rates during COVID, will drive college enrollment numbers lower still. Even the best-case projections look grim.

Unlike birth rates, college enrollment rates tend to rise during recessions as people look for ways to increase their value in the job market. But 2020 was not a typical recession. New enrollment at 2-year colleges didn't just slump last year—it tumbled off a cliff. First-time student enrollment at community colleges [fell a staggering 21%](#).

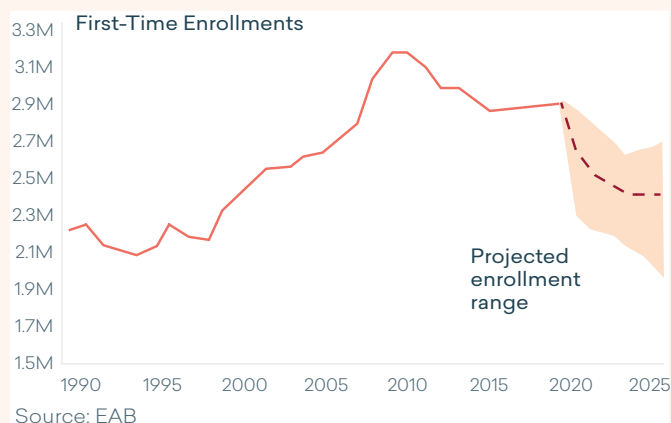
2019 US school age population (birth-22years)

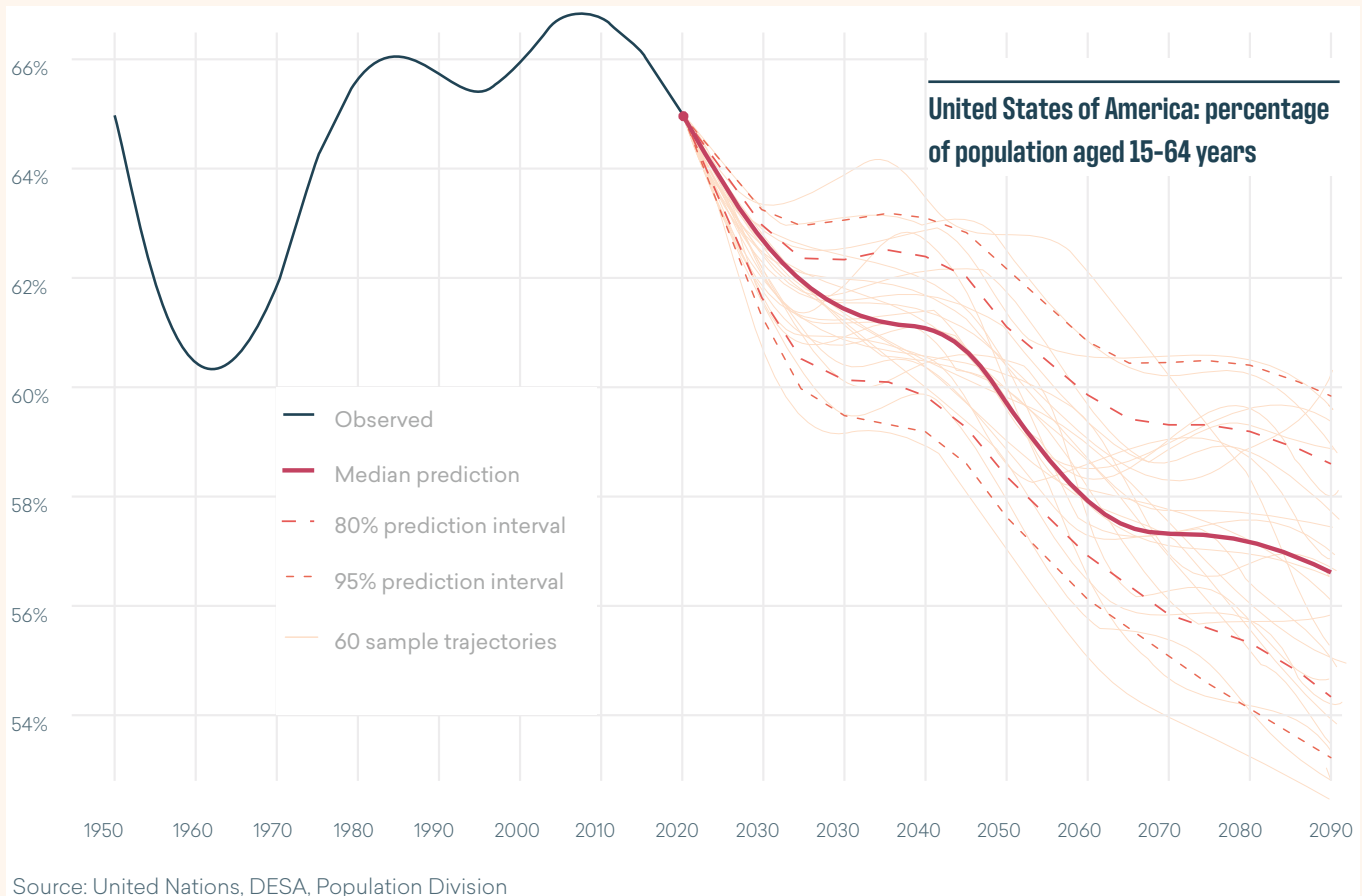


Student enrollment at US colleges down 11% since 2011



First-time enrollments are projected to decline sharply





HUMAN RESOURCES AND RECRUITING

Hiring and recruiting will be increasingly competitive as employers scramble for a diminishing supply of talent. As we discussed in the previous chapter, the US labor force participation rate has fallen dramatically, shrinking the pool of talent for would-be employers. But the pandemic is going to make a tough situation tougher still.

The working-age population is falling steeply as a percentage of the total population, and the resulting trouble for HR and recruitment is clear: fewer people of working-age means fewer people available to work (even if they were willing and ready to do so, which, as we have seen, many are not.) The so-called [“War for Talent”](#) will almost certainly intensify as companies compete to attract warm bodies from a declining cohort of young workers.

Already, [40% of HR leaders](#) say that their organization has felt the negative impact of the present talent shortage. And before this decade is

over, the shortage of educated workers is projected to be extreme. [AAF reports](#) that the American labor market will face a deficit of 800,000 workers who have associates degrees or some college, and a colossal shortage of 8.5 million American workers with bachelor’s degrees or higher. What will these shortages cost us in terms of economic output? A projected \$1.2 trillion. That is a 12-digit loss of economic output. And it’s not the result of a stock market crash or bad business deals or falling behind in technology, or even a pandemic. It’s the projected result of a massive shortage of educated people.

But simply churning out more college grads is a dream that’s unlikely to become a reality. Higher ed, as we just showed, is facing recruitment shortfalls of its own, which means the supply of educated talent is going to be tighter still in the years ahead. Ready-made talent was a feature of the boomer workforce, but recruiters now need to adapt their expectations to the challenges of the present and the future.

Companies can no longer expect to hire the perfect candidate off the shelf. In fact, pulling any candidate off the shelf is getting harder. As we will discuss in a later section, on-the-job training, in-house recruitment, and high retention rates will be among the key survival strategies for HR.

THE ECONOMY

All of the issues above, and many more, work together to shape the overall economy. The word economy comes from the Greek word *oikonomos* which means household management. Whether starting a business, going back to college, moving to a new city, or having another child, millions of trans-generational household decisions affect the prosperity of an entire society.

As University of Chicago economist Gary Becker explains, investment in [human capital](#) produces economic prosperity. In other words, economies are built by people. Economies are people.

More specifically, it's working people who keep the economy running. So what happens when we start losing people?

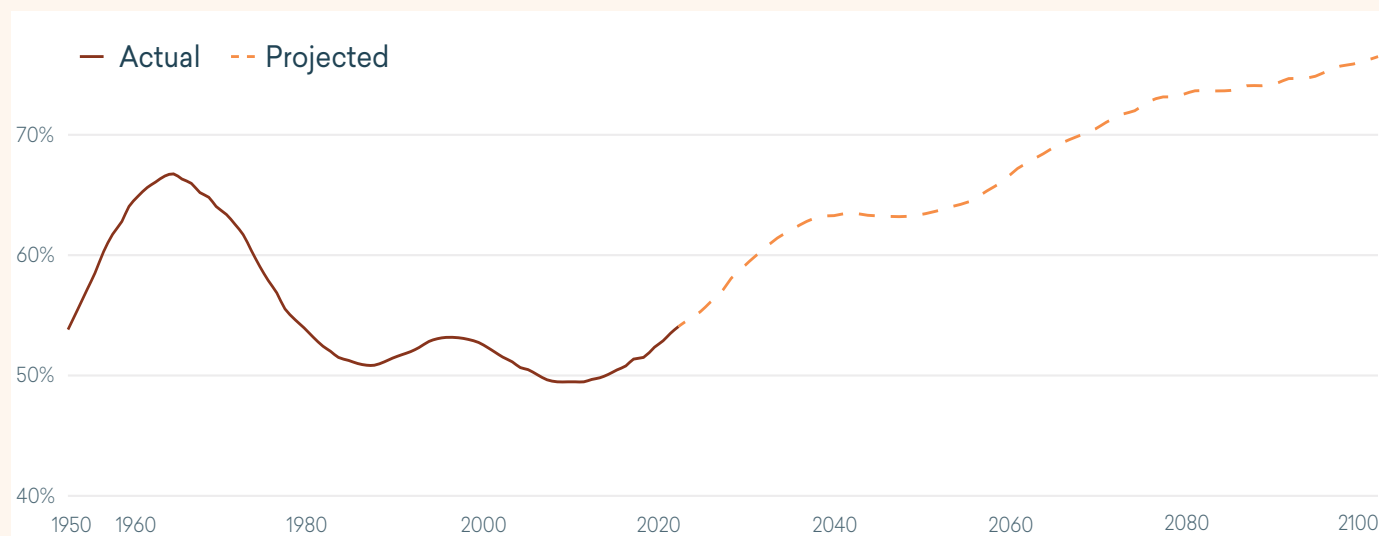
In some ways, the answer is already in front of us. As a [report](#) from the International Monetary Fund reminds us, the sheer size of the labor force is “one of the main determinants of economic output.” And our labor force is shrinking.

As [NBER describes it](#): “The more workers there are. . .the more income the nation is likely to generate.” The reverse is true as well: the smaller the percentage of workers, the smaller the per-capita output of the nation will be.

The relationship between population growth and the economy isn't entirely straightforward and obvious, however. Short-term effects tend to obscure the long-term consequences.

For example, soaring population growth does not automatically equal economic prosperity. In fact, extreme population growth can understandably cause growing pains—such as the economic burden (especially in the short term) as parents labor to provide for large families, often on a single income as somebody must be present to care for young children. Prosperity arises not simply from population growth but from [a combination of people and opportunity](#).

Age dependency ratio projection



Source: United Nations - Population Division (2019 Revision)

Similarly complicating the issue is the fact that low fertility does contribute to short-term gains in economic output. These gains come largely from changes in the age dependency ratio—the percentage of non-working-age people (children under 15 and adults over 64) in the population who are dependent for support on those of working-age. With fewer dependent children to care for, the age dependency ratio drops for a time, allowing working-age adults to enter the job market in large numbers. The boomers were a case in point. Because of their smaller families, millions of young adults joined the workforce and caused innovation, living standards, and per-capita GDP to surge.

But this period of rapid, boomer-driven growth is now drawing to a close. And it was built, demographically speaking, on borrowed capital from their economic future—a future which is now our economic present. The age-dependency ratio was not eradicated by having fewer children. It was simply postponed. As boomers age out of the workforce, leaving fewer young people of working-age to replace them and support them financially, that dependency ratio is returning to collect what was borrowed... with interest.

But these caveats aside, it's impossible to weigh or enumerate the myriad of harsh consequences of the coming sansdemic. Fewer people means fewer new ideas. Fewer students. Fewer people in research and innovation. Fewer skills in the job market. Fewer employees. Fewer products and fewer goods. Fewer opportunities for growth. As a result, Stanford economics professor [Charles Jones argues](#) in a 2020 report, the standard of living will stagnate or decline.

[Lyman Stone describes the situation in stark terms:](#)

Even a modest decline in fertility results in literally tens of millions of fewer people. . .meaning a seismic impact on how many cities can expect to forecast growth, the distribution of political power, and the rate of GDP growth.

To give an industry-specific example, the US could lose as much as [\\$162 billion in revenue](#) annually unless it finds more high-tech workers. For another example, the healthcare sector will dramatically downsize within the next few decades as boomers gradually die out. Healthcare, after skyrocketing to meet age-related needs, will diminish to meet the declining needs of a declining population.

Europe and Japan, as we already discussed above, can serve as an illustration of what can happen to schools, universities, businesses, social programs, GDPs, and the people themselves, after decades of low fertility. If our own population growth trends and falling fertility continue to follow the same pattern, we can expect similar crises to result.

CH 5.



WORKFORCE FUTURE

Can We Find an Oasis in the Demographic Drought?

TAKEAWAYS

» Immigration isn't a long-term solution to the US demographic problem, because almost every other country is facing a similar trajectory.

» Even in the highly unlikely scenario where we instantly raised our birth rates, the benefits wouldn't take full effect for decades.

» Capital investments and automation may mitigate but cannot avert the crisis. Technology cannot fully replace human beings.

» Broader recruitment strategies, targeted skills training, and higher retention can keep the talent pool from drying up prematurely.

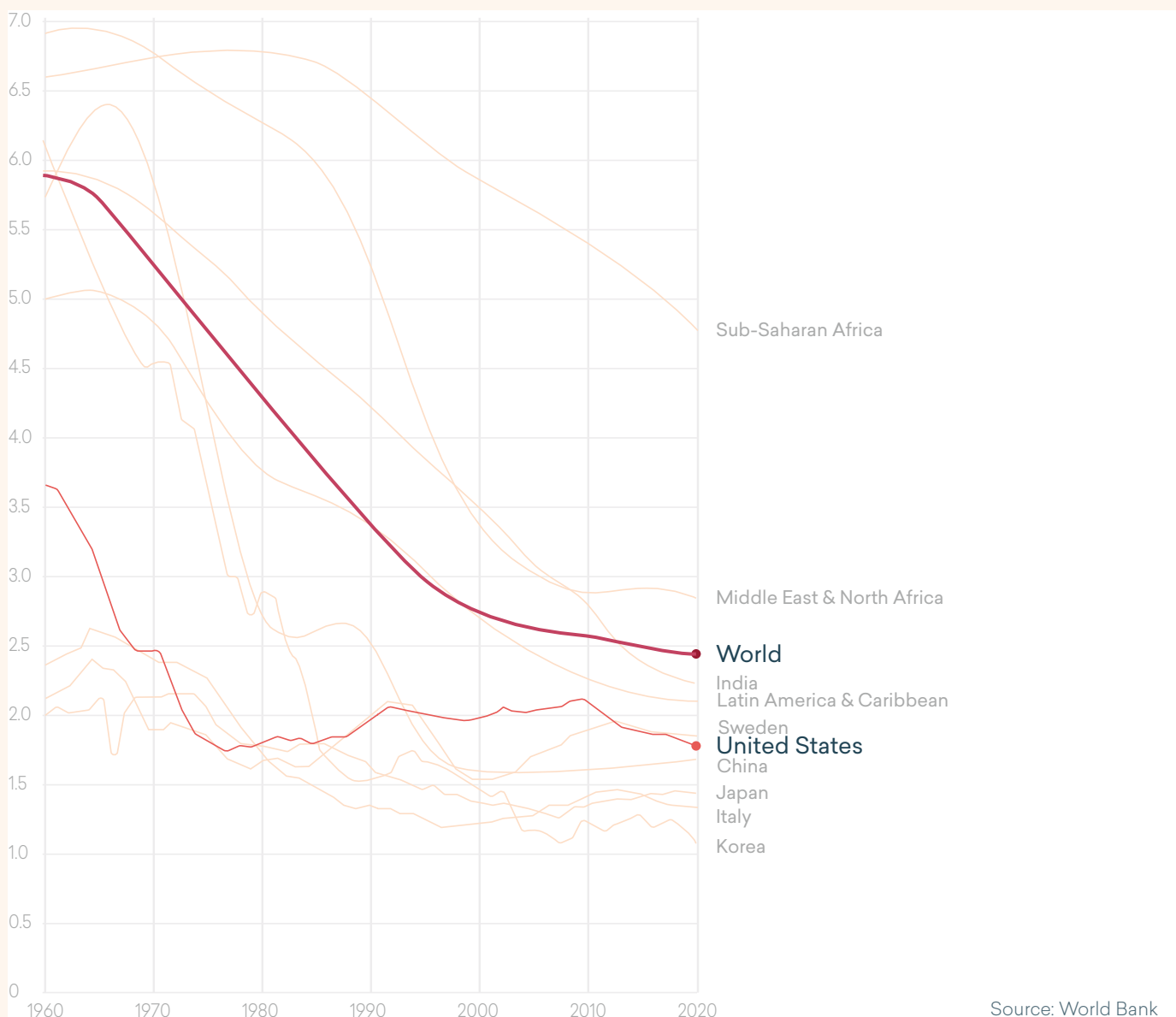
The point of this publication is primarily to raise awareness, not to provide a silver bullet, for there is none. Nevertheless, there are a few stopgaps we can employ to work with the challenge, even if we cannot immediately eradicate it.

Immigration will not fix the problem

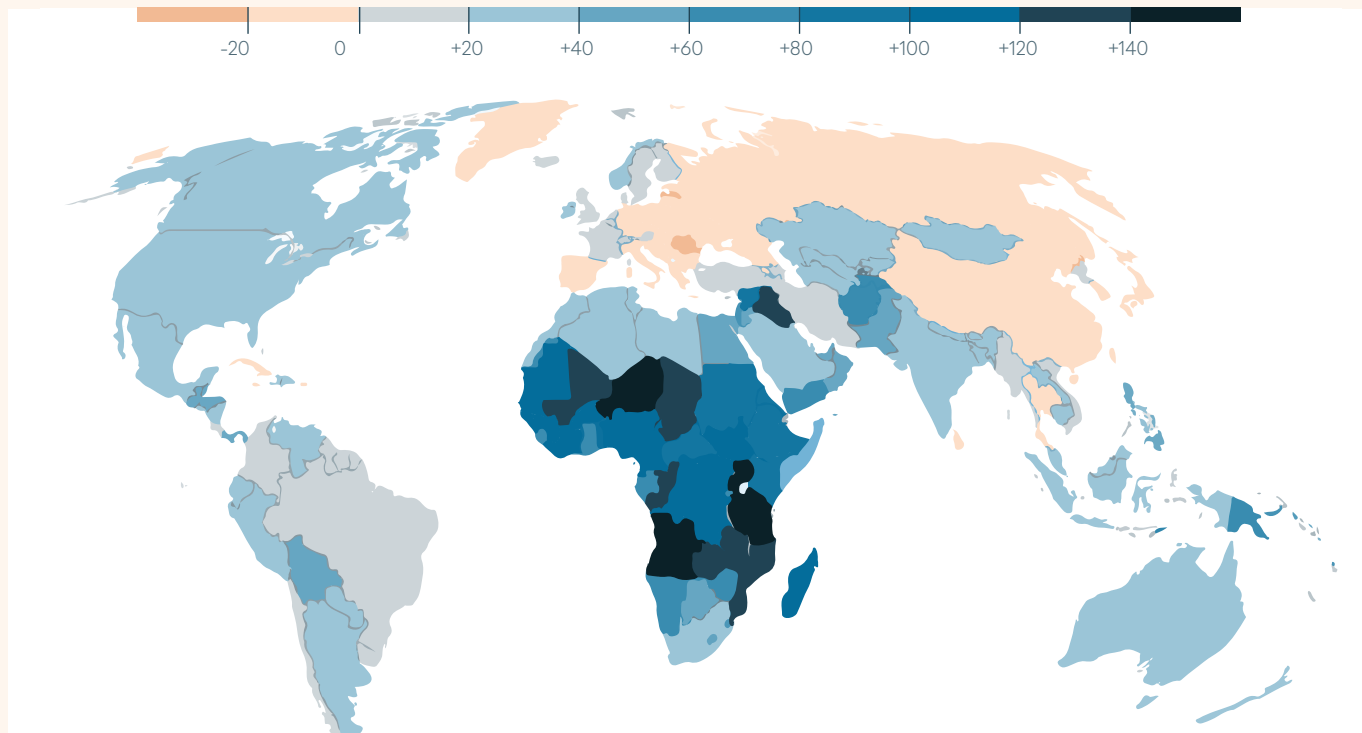
First, let's consider one apparent solution that isn't: immigration.

Now, immigration can temporarily slow the decline in population. In fact, immigration has certainly helped offset much of the fertility deficit in the US, especially in high-immigration regions like the southwest. In the coming decades close to [90% of US population growth](#) is expected to come by way of immigration; without it, the US population would begin to shrink within about 15 years.

Since 1960, fertility rates have declined not just in the US but around the world



Projected percent change in population, 2017–2050



But the immigration solution is temporary at best. Immigration will not solve America’s long-term population woes due to the fact that many of the countries that supply America’s immigrants are themselves teetering on the edge of the same people problem. Mexico, which accounts for nearly 25% of all immigrants in the US, has a fertility rate that has fallen steadily for 50 years. It is [now at just 2.12](#), barely above replacement rate. Immigration from Sub-Saharan Africa, South Asia, and parts of the Middle East, which currently have TFRs above 2.1, could ostensibly temporarily help offset shrinkage in the US, yet even in these regions, fertility rates are in decline.

Indeed, fertility rates are dropping around the world. During the baby boom of 1946-1964, fertility rates hit historic highs. Beginning in the mid-1960s, however, global fertility went into a freefall. By 2017, global TFR had dropped to less than half what it was in 1960: [2.4 and falling](#).

By the mid-1970s, fertility rates in much of the developed world dropped below that magic 2.1 replacement number. In fact, several of these

nations, including Japan, Spain, Italy, and most of central and eastern Europe, have already stopped growing. Over the next 30 years, dozens more are [projected to shrink](#)—some by over 20%.

A [2020 study](#) in *The Lancet* made international headlines with its projections that the world’s human population will likely peak in 2064 and then gradually lose nearly 2 billion people by 2100 as the global TFR shrinks to a mere 1.66. 2064 is just 43 years off—not exactly the distant future—but a new report from [Bloomberg](#) cites economist James Pomeroy, who believes the COVID baby bust could halt global population growth a full decade sooner than that.

Meanwhile, as developing nations do just that—develop their economies and create new opportunities at home—their citizens will be more likely to stay put. The top three countries that account for immigrants into the US—Mexico, China, and India—are facing massive talent shortages of their own.

65% of Mexico’s large companies [reported talent shortages](#) in 2018, while 63% of India’s companies

also face [major talent shortages](#), and [China is struggling to fill roles](#), particularly for skilled labor. The high-demand roles that the US needs to fill are also in high demand around the world, meaning the competition for international talent may slow immigration. Low-fertility countries like the US should expect immigration from those countries to decline over the coming decades.

So it would be inadvisable for the US to rely on immigration to solve the coming pandemic.

Have more babies?

The obvious solution, it seems, would be to have more children. This indeed would have been the solution 20-40 years ago. But today this would require a solid two decades before the first of these new baby boomers would enter the labor force in the way the US so urgently needs.

Consider the attempts of other countries to encourage having more children. [Global efforts at raising fertility rates](#), when they have had any measurable effect at all, have met with only minor success. Countries such as Russia, Singapore, and Italy have tried offering cash to families who have more children, but these initiatives have done little to up the birth rate. And consider this: the US, too, provides incentives in the form of per-child tax credits, yet we've already seen that fertility rates continue to slide.

The countries that have seen a somewhat higher degree of success at raising birth rates are those like Sweden and France that introduced [a much more comprehensive package of incentives](#). These include extensive paid parental leave, childcare subsidies, reduced work hours, tax breaks, and so on. These incentives, however, carry their own economic burden, and even in these cases, the increase in fertility has been moderate at best. [Nor is it clear](#) whether these short-term increases represent a real increase in the total completed fertility or simply allowed people to have the same number of children a bit earlier in life. In spite of its massive package of parental incentives, [Sweden's fertility](#) rose from 1.7 to

a peak of just 1.9 in 2010 and has [dropped every year since](#), returning to 1.7 last year. [Not a single European country](#) has succeeded in raising its fertility rate above the 2.1 replacement level.

If Americans are to be inspired to have more children, it seems the motivation must come from sources beyond public incentives and accommodations. We've seen the long list of possible reasons that the fertility rate has fallen. The potential reasons for raising it will likely be just as varied.

But best case scenario, let's assume that Americans are indeed spurred on to have more children starting, well, immediately, in 2021. What can we do over the next two decades as we wait for these new people to join the labor market? Is there anything we can do? The answer is yes. We must look for ways to adapt.

Technological innovation won't save us

Mitigating the worst effects of our falling fertility rates is going to require a lot of creative thinking. To a limited extent, innovation and technology can help fill some of the gaps left by a shrinking workforce. Automation and new technologies have already helped reduce the human workload in sectors like manufacturing, and may eventually play a key role in other sectors as well. As Adam Hayes at Investopedia [reports](#):

"It is clear that to sustain economic growth, either the birth rate needs to increase by a large amount or productivity needs to keep increasing. To grow productivity, workers need to work harder, or technology must advance, allowing each worker to contribute more economic output without sacrificing the quality of life."

Innovation and technology can help fill some of the gaps left by a shrinking workforce, but to what extent is a matter of ongoing debate. The claim that [AI and tech will replace humans](#) in the workplace has raised concerns about the future of the job market. But historic patterns and current shortages indicate that AI will, at very least, be a poor replacement for human talent in the near term.

Previous technological innovations have tended to create a net [reallocation](#) in jobs over time—from stable hands to auto mechanics, for example—rather than a net loss of jobs. Technology has tended to [create more jobs for humans](#), not fewer. As computers increase, so do the development, tech support, and assembly jobs that make them possible. With increasing automation, many jobs actually become more sophisticated and require more investment in workers, as we can see with the demand for [advanced manufacturing](#).

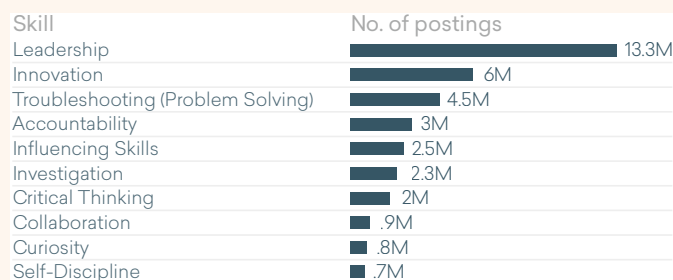
It’s true that automation and new technologies have already helped reduce the human workload in specific sectors like manufacturing, and may eventually play a key role in other sectors as well. But for an AI takeover to even remain a possibility, technological innovation must continue apace (or accelerate), and for that we need more humans developing these technologies. The real challenge that every sector of the market is feeling is not a shortage of robots but of [human workers](#). Yet humans, especially those with the necessary skills, will be increasingly hard to find in the plenteous numbers we need to fill those high-tech roles.

Companies trying to invest in AI development already face [significant worker and skill shortages](#). As for robotic automation, analysis of [market share](#) for robotic automation has shown that the industries already most invested in it (automotive, electronics, and metal) are still the ones driving the market while collaborative robots are not meeting the standards needed for market penetration.

The good news and the bad news is that no matter how advanced technology becomes, it will never be able to fully replace humans. This may come as a relief since it means robots are probably not coming to steal your job. But it should also serve as a warning that technology will only be able to do so much to make up for the shortage of actual people.

Human beings have high-demand skills such as leadership, problem-solving, and collaboration that no computer yet can successfully replicate. These continue to rank incredibly high in job postings [across the labor market](#).

Top human skills requested in top job postings



Source: Emsi job posting analytics

Ours remains a human capital economy. People, not robots, still drive business and create prosperity. Technology alone cannot compensate for a loss of human creativity and ingenuity. For at least the foreseeable future, AI will mostly likely [work alongside](#) human talent, rather than replace it.

Recruit beyond traditional demographics

Colleges and universities are increasingly aware of the need to reach non-traditional students. As the number of college-bound high school graduates declines, programs geared toward adult learning and non-degree training could further boost enrollment. Higher ed should also continue to expand recruitment to areas and communities that are underrepresented in the college classroom.

Talent acquisition may need to take a similar approach. We’ve seen that the active prime-age workforce is shrinking, so HR directors will need to seek out additional people who have sometimes been overlooked as candidates to fill job openings. This includes people nearing retirement age.

Greater longevity and better health outcomes are starting to redefine what we mean by “working-age” adults. Older employees [can be an advantage to businesses](#), and for many, their work expertise is still peaking at age 65 and beyond. Mature adults can continue to bring experience, insight, and value to a company in ways that young talent can’t easily replace. Cultivating, reskilling, and retaining older workers can help businesses prevent and fill many of the talent gaps that are facing other companies.

Companies will also need to adjust to the [changing expectations](#) of their both older talent and new recruits. Higher pay and promotions may not be the incentives that attract new talent or drive retention among these demographics. Instead, incentives like flexible or reduced hours, mobility, and recognition may be what draws new people and keeps good employees happy. Rather than relying on what worked in the past, find out what motivates people in the present, and adapt.

Reskilling, upskilling, and alignment

Focusing on skills is more critical than ever. As job openings sit unfilled for months, and as qualified candidates are harder to find, higher ed and HR will have to work together to create the talent that businesses need. Companies can't assume they'll be able to find the right talent. Instead, they must build that talent base for themselves. By working with higher ed to build programs that meet the needs of the job market, offering upskilling or reskilling opportunities to current employees, and providing on-the-job training for new recruits, businesses can close or at least narrow their talent gaps.

On the flip side, colleges and universities should be proactive about understanding the needs of employers and developing responsive programs to help. Ideally, these programs will be developed in collaboration with industry partners who can also provide real-world work opportunities for students.

Retain students and employees

Colleges and universities must focus on retention, not just enrollment. Part of this will involve recognizing the kinds of students the college serves, and considering the obstacles they may face in continuing their education. For example, as of 2012, [1 out of every 5 women](#) in college was a single mom. In 2020, when their kids were sent home, those moms had to trade the college classroom for the homeschool classroom.

Helping these students with adult responsibilities

complete their education, despite the challenges, can allow postsecondary educators to boost retention. Creativity will be key. Retention may require more flexible schedules and self-paced courses, deferred payment plans, mentorship programs, child care assistance, or improved social opportunities for students on the margins of college life.

Just as the demands of the current workforce have changed, the needs of the current college student have changed over time. Today, nearly [three-quarters of college students](#) could be described as nontraditional. Attracting and keeping nontraditional students will require nontraditional strategies.

Similarly, businesses must focus on retaining current employees, not just hiring. As Japan has discovered, weathering a talent drought requires businesses to obsess about retaining especially their older employees. As people live longer and jobs in the developed world require less physical exertion, older adults could work well past the current retirement age. In many cases, they must. To keep their aging economy from collapse, the Labor Force Participation rate in Japan for people over age 65 has [risen to 25%](#).

In the years ahead, the US will need to move toward similar integration of older workers. Remember how the population pyramid has been squeezed into a population balloon? In less than 15 years, the number of adults aged 65+ is projected to surpass the number of children under 18 in the US. This presents challenges for HR and recruitment—especially at a time when health concerns have driven older workers into early retirement.

Certain painful consequences from the current demographic shift are unavoidable. Colleges and businesses may close for lack of people. The economy may shrink and living standards decline. But those who study the data and plan creatively can fare better in the coming years.



CONCLUSION

Value people more

A talent deficit of over [6 million Americans](#) within the next seven years threatens not just colleges and companies but our common way of life. Losing people means losing many of the goods and services and standards of living we have grown to expect. If we want classrooms full, jobs filled, packages delivered, hospitals staffed, and help available when we call, we need people.

People are a resource we can no longer afford to take for granted. As one generation ages, as the next generation opts out of the labor force, and as the coming generations shrink, we need to do the best we can to keep the people we have. Retain, retain, retain. Keep your people, keep your students.

So this is the lesson for colleges, employers, and families everywhere: Every student you enroll, every person you hire, every child born is so much more important than you have ever imagined.

And for the millions of dislocated and job-hunting Americans, there is good news! Times of talent shortages also mean times of opportunity. The labor market needs you. Employers need you. It is a workers' market.

In a human capital economy, people are the key ingredient—a truth that will become only more apparent during the coming pandemic. Every student, every employee, every potential employee is valuable.

Glossary

Birth rate

The number of live births per thousand of population per year.

Fertility rate

The number live births per 1,000 women of childbearing age in a given year.

Labor force

The population that is employed or actively seeking employment and available to work.

Labor force participation rate

The percentage of a given population that is employed or actively seeking employment and available to work.

Population decline

A net decrease in population due to decreased fertility, increased mortality, or emigration

Population growth

A net increase in population due to increased fertility, decreased mortality, or immigration.

Population growth rate

The change in population, positive or negative, expressed as a percentage of the original population.

Prime-age working population

The population between 25 and 54.

Replacement rate

The number of live births per woman over the course of her childbearing required to replace a given population.

Total fertility rate

For a given year, the number of children a woman would have in her lifetime assuming the fertility rates at each age for the year in question continue unchanged.

Working-age population

The population between 15 and 64.

