



# Consequences of State Disinvestment in Public Higher Education: Lessons for the New England States

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# Disclaimer

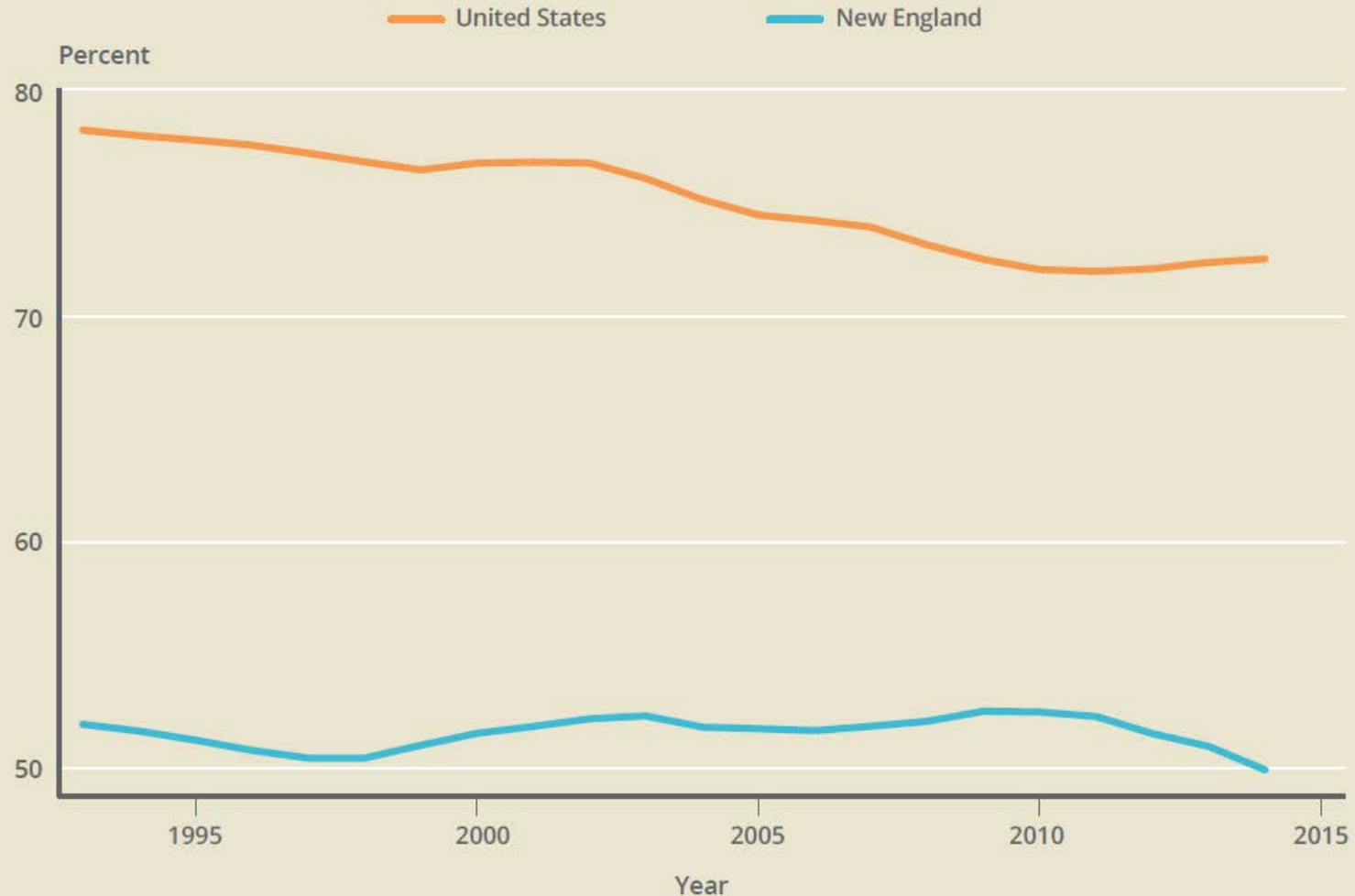
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# Importance of Public Higher Education

- ▶ Increase labor productivity and wages
- ▶ Promote long-term employment growth
- ▶ Spur innovations in private industry
- ▶ Generate a positive net return for governments
- ▶ Help address social and economic inequality

# Half of Higher Education Students in New England Were Enrolled in Public Institutions

The Percent Shares of Fall Enrollment in Public Institutions, 1993-2014



Source: National Center for Education Statistics, Digest of Education Statistics.

# Community Colleges Have Been Playing an Increasingly Important Role in the Two-year Postsecondary Sub-sector in New England

## Fall Enrollment in Community Colleges as a Share of Enrollment in Public and Private Two-year Institutions, 1993-2014



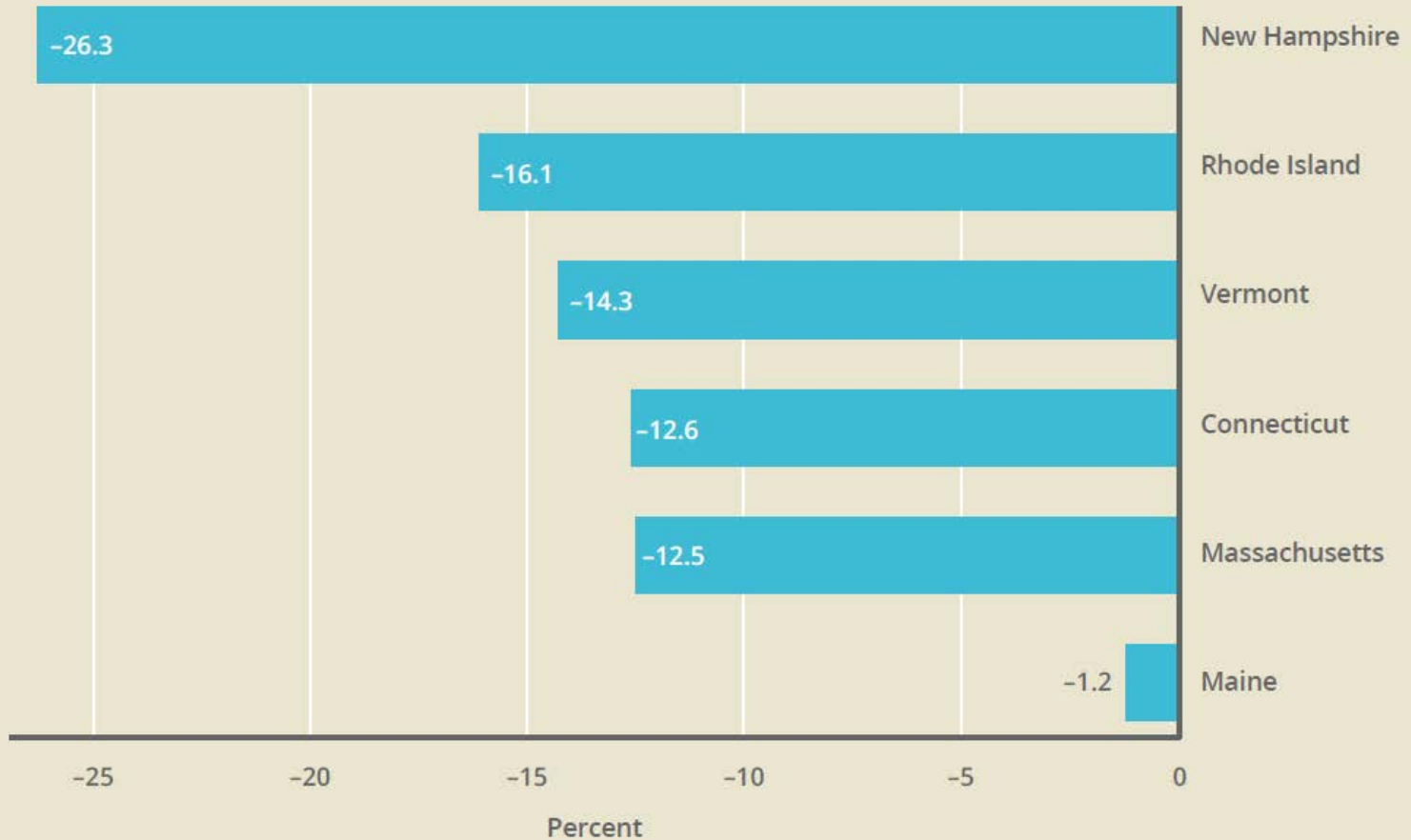
Source: National Center for Education Statistics, Digest of Education Statistics.

# Public Higher Ed Funding at Increasing Risk

- ▶ State appropriations declined over several decades
  - ▶ Partly due to recession-related budget cuts
  - ▶ Partly due to crowd-out by Medicaid and public pensions
- ▶ Many public university administrators, students and families, advocacy groups and practitioners are very concerned.

# State Funding for Higher Education Remains Below Pre-Great Recession Levels in the New England States

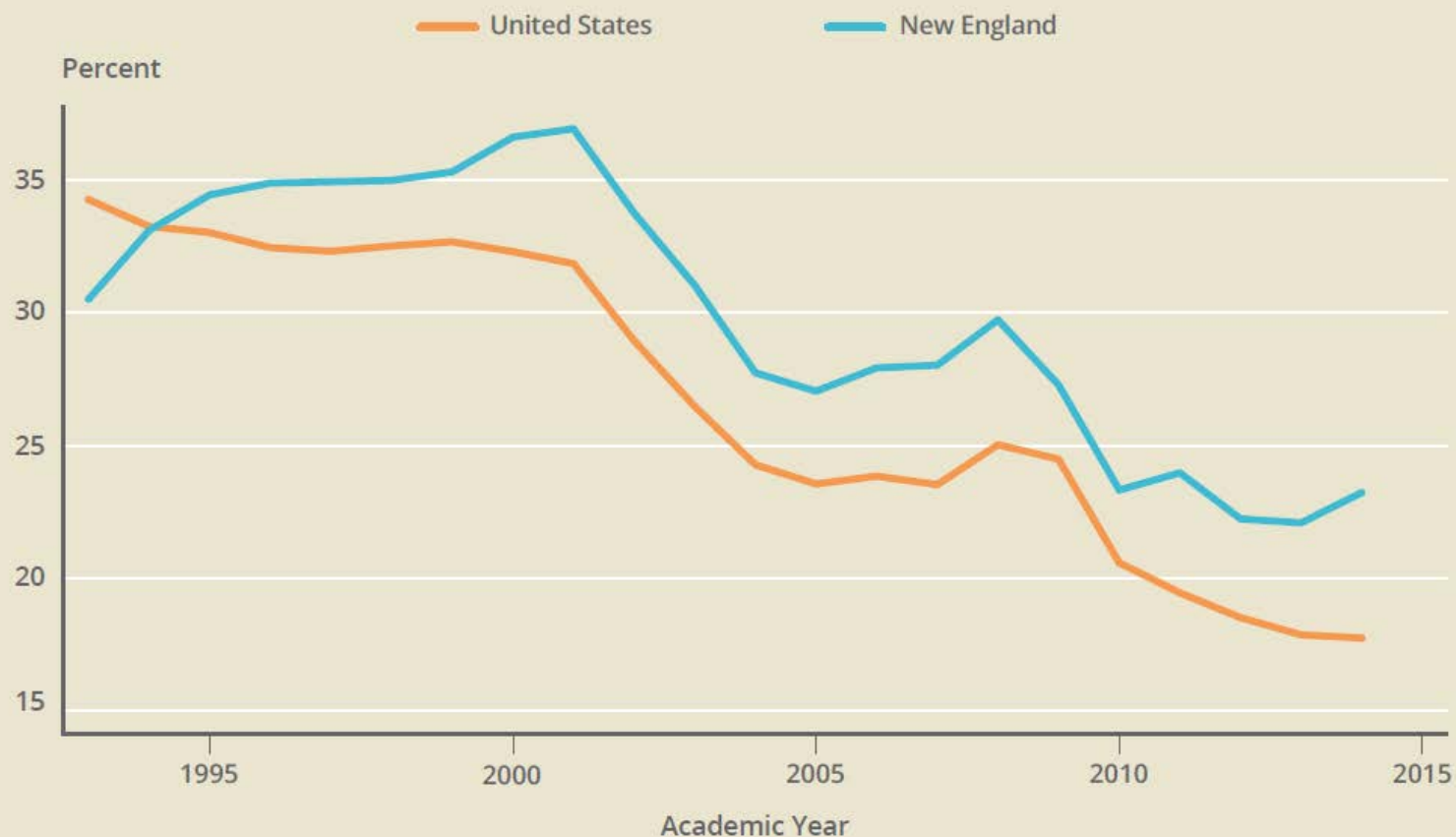
Percent Change in Inflation-adjusted State Spending on Higher Education per Student between 2008 and 2017



Source: Center on Budget and Policy Priorities.

# State Appropriations Have Been Playing a Decreasing Role in Financing Public Institutions

## State Appropriations as a Share of Total Revenues of Public Institutions, 1993-2014



Source: National Center for Education Statistics, Digest of Education Statistics.

Note: Total revenues for 2002 and 2003 and state appropriations for 2002 are missing and are estimated using interpolation.



# Research Questions

▶ What are the consequences of state disinvestment in higher ed?

▶ Tuition and fees

▶ School expenditures

▶ Degree completion

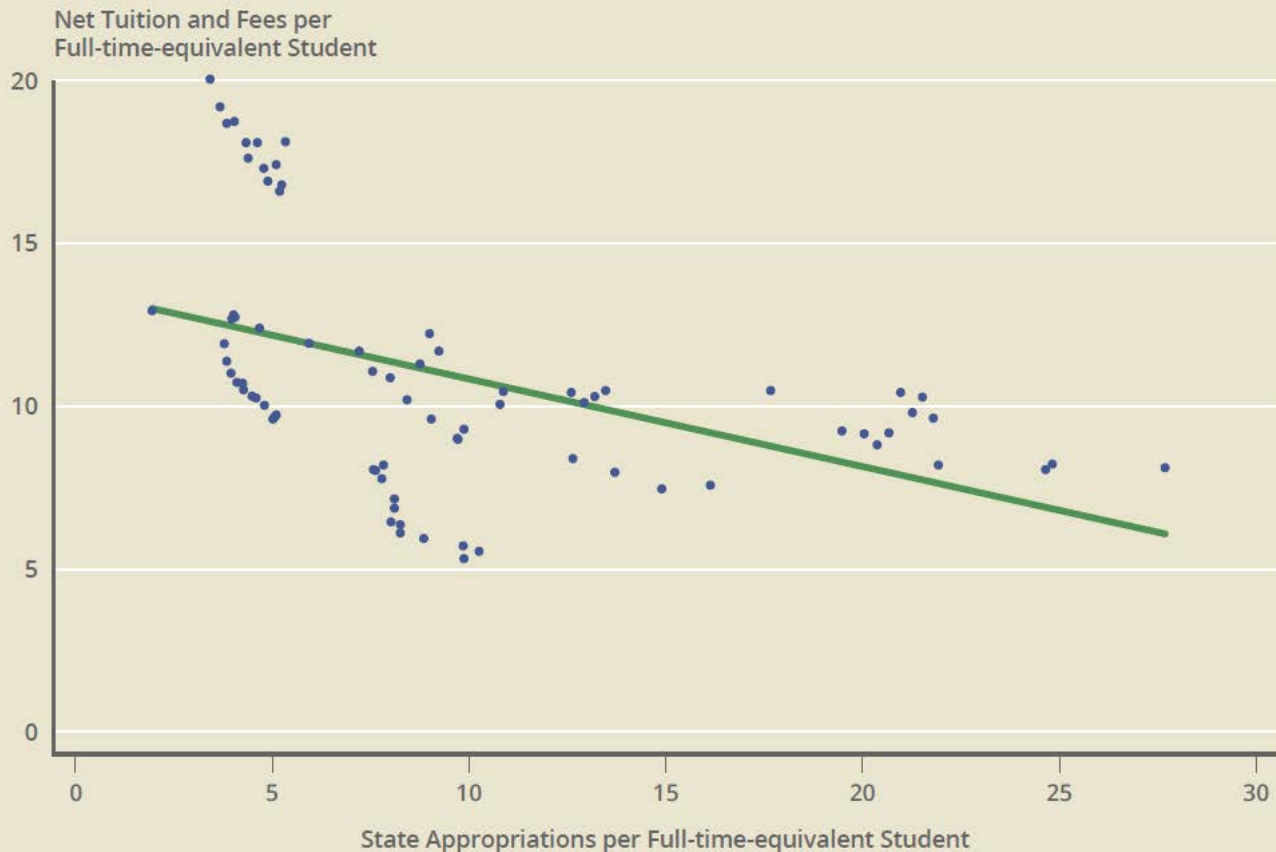
▶ Research productivity

▶ Draw implications for New England

▶ Provide policy recommendations

# Public Doctoral Institutions Tend to Raise Tuition and Fees When States Reduce Appropriations

## State Appropriations versus Net Tuition and Fees among Public Doctoral Institutions, 2000-2012



Sources: National Center for Education Statistics, Delta Cost Project; author's calculations.

Note: The figure is based on the data of six New England public doctoral institutions for 2000–2012. The straight line is generated from a univariate regression, which describes a simple linear relationship between the two variables in question. Net tuition and fees are defined as gross tuition and fees net of scholarships and fellowships that institutions award to students. All financial variables are in thousands of 2012 dollars.

# Impact on Tuition and Fees

- ▶ A \$1 decrease in state appropriations for public doctoral institutions results, on average, in an increase of 17 cents in net tuition and fees.
- ▶ Implications for students: more student loan debt

# Public Doctoral Institutions Tend to Cut Spending When States Reduce Appropriations

## State Appropriations versus Education and Related Expenditures among Public Doctoral Institutions, 1987-2012



Sources: National Center for Education Statistics, Delta Cost Project; author's calculations.

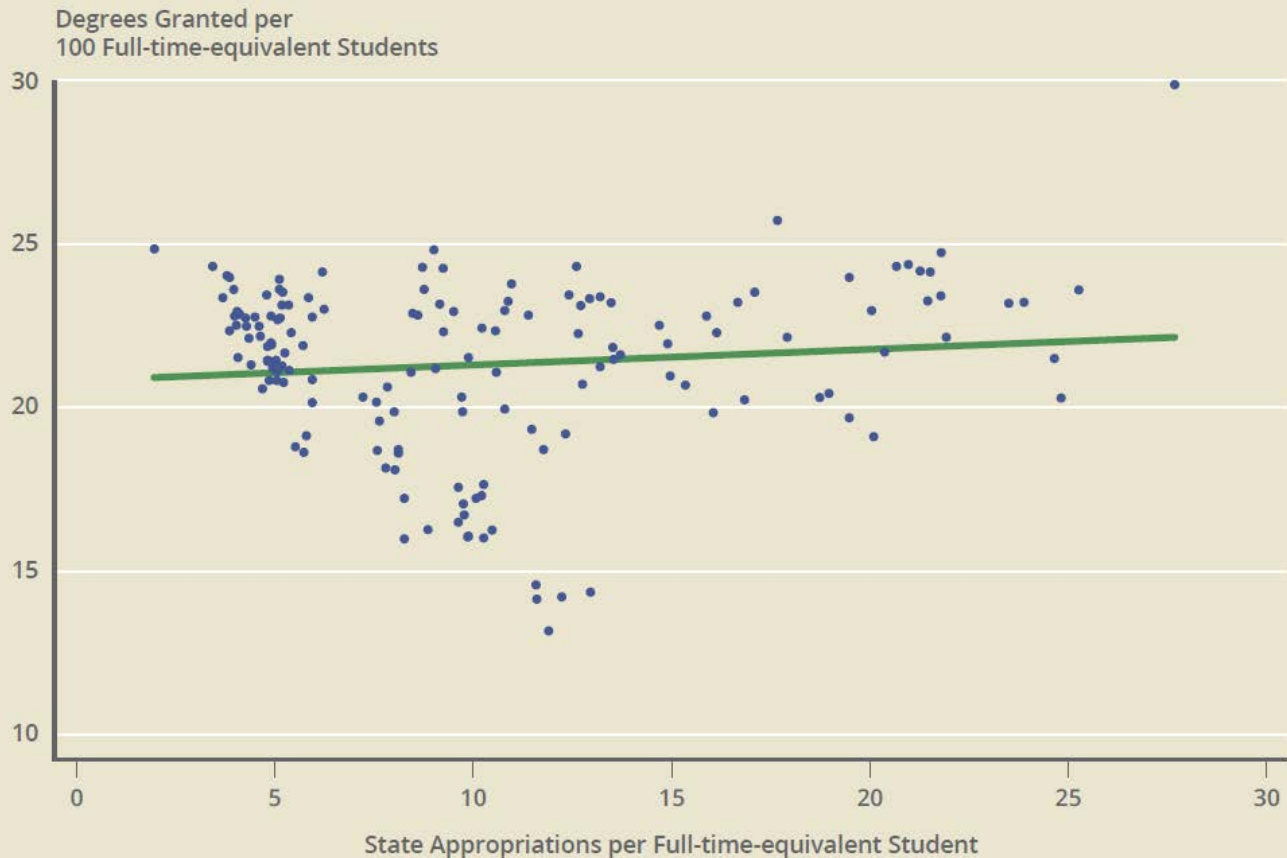
Note: The figure is based on the data of six New England public doctoral institutions for 1987–2012. The straight line is generated from a univariate regression, which describes a simple linear relationship between the two variables in question. All financial variables are in thousands of 2012 dollars.

# Impact on School Expenditures

- ▶ For public doctoral institutions, a \$1 cut in state appropriations results, on average, in a reduction of
  - ▶ 30 cents in instructional expenditures
  - ▶ 15–21 cents in research expenditures
  - ▶ 7 cents in public service expenditures
  
- ▶ For community colleges, a \$1 cut in state appropriations results, on average, in a reduction of 56 cents in instructional expenditures.

# Degree Completion Tends to Decline When States Reduce Appropriations

## State Appropriations versus Degrees Granted among Public Doctoral Institutions, 1987-2012



Sources: National Center for Education Statistics, Delta Cost Project; author's calculations.

Note: The figure is based on the data of six New England public doctoral institutions for 1987–2012. The straight line is generated from a univariate regression, which describes a simple linear relationship between the two variables in question. All financial variables are in thousands of 2012 dollars. Degrees granted include bachelor's and graduate degrees.

## Impact on Degree Completion in Public Doctoral Institutions

- ▶ A decrease of \$10 million in state appropriations results, on average, in 10 fewer graduate degrees granted.
- ▶ The six New England public doctoral institutions collectively granted 462 fewer graduate degrees in 2002–2012 than if they had received per-student state appropriations at the inflation-adjusted 2001 level each year since 2001.

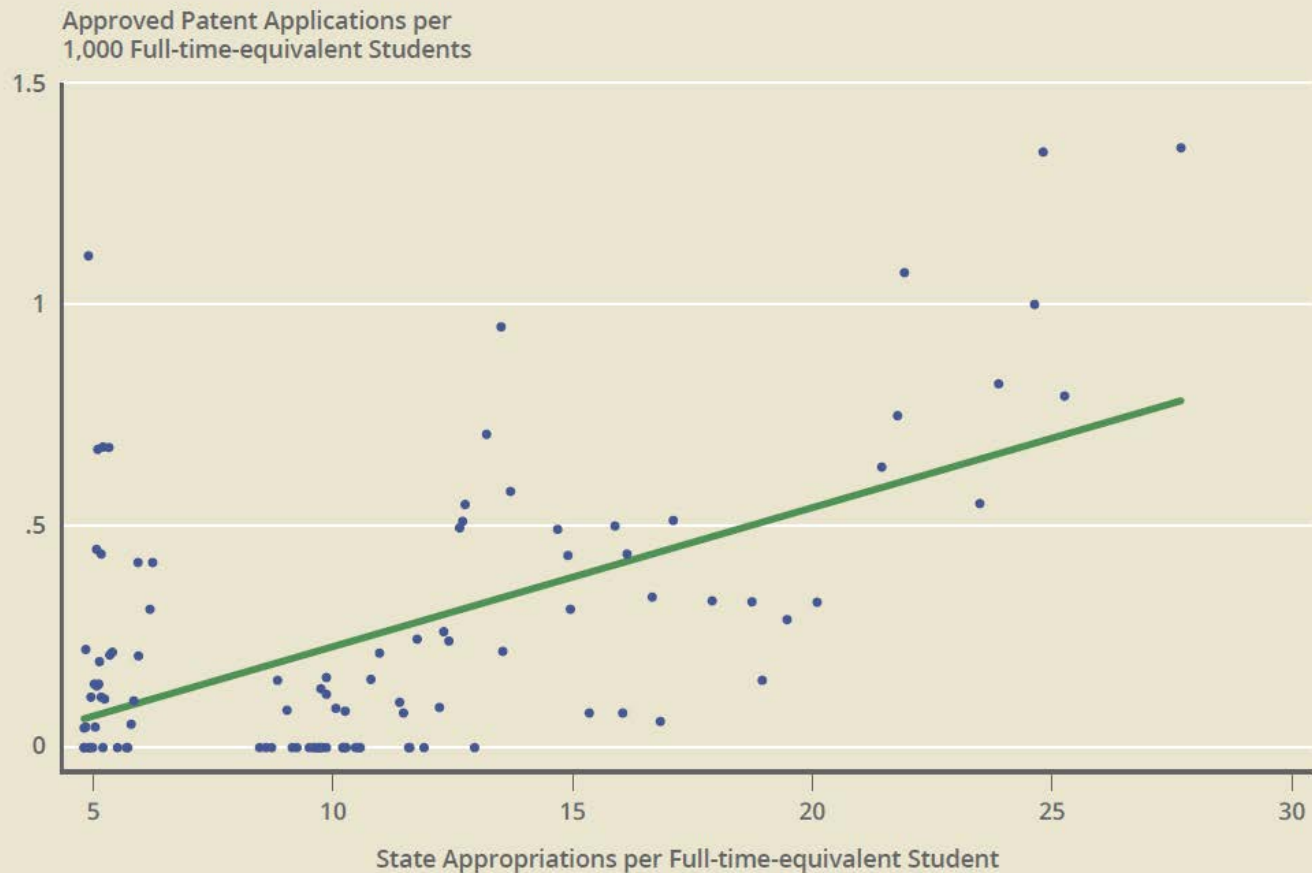
# Impact on Degree Completion in Community Colleges

- ▶ A decrease of \$10 million in state appropriations results, on average, in 57 fewer associate degrees granted.
- ▶ Community colleges in New England collectively granted 21,388 fewer associate degrees in 2002–2012 than if they had received per-student state appropriations at the inflation-adjusted 2001 level each year since 2001.



# The Number of Approved Patent Applications Tends to Decline When States Reduce Appropriations

## State Appropriations versus Approved Patent Applications among Public Doctoral Institutions, 1987-2003



Sources: National Center for Education Statistics, Delta Cost Project; United States Patent and Trademark Office; author's calculations.

Note: The figure is based on the data of six New England public doctoral institutions for 1987–2003. The straight line is generated from a univariate regression, which describes a simple linear relationship between the two variables in question. All financial variables are in thousands of 2012 dollars.

## Impact on Research Productivity in Public Doctoral Institutions

- ▶ A decrease of \$13 million to \$42 million in state appropriations results, on average, in one less approved patent application.
- ▶ The six New England public doctoral institutions collectively produced 117 to 369 fewer approved patent applications in 2002–2012 than if they had received per-student state appropriations at the inflation-adjusted 2001 level each year since 2001.

# Policy Recommendations for State Policymakers

- ▶ Consider providing more protection to community colleges, which are more vulnerable to the negative consequences of state funding cuts
- ▶ Consider building up rainy day funds during economic booms
- ▶ Take actions to close the long-term budget gaps
  - ▶ Address the growth of Medicaid and unfunded pension liabilities
  - ▶ Consider raising more state revenues

# Backup slides

# Some New England States Are Particularly Reliant on Public Four-year Institutions

The Percent Shares of Fall Enrollment by Institution Type, 2014

	Public		Private			
	Four-year	Two-year	Four-year		Two-year	
			Nonprofit	For-profit	Nonprofit	For-profit
<b>United States</b>	40.9	31.7	19.6	6.3	0.2	1.4
<b>New England</b>	29.0	20.9	48.1	1.7	0.1	0.2
<b>Connecticut</b>	33.3	27.3	34.9	4.6	0.0	0.0
<b>Maine</b>	42.5	25.2	29.2	2.2	0.4	0.6
<b>Massachusetts</b>	24.4	19.9	54.6	0.7	0.2	0.2
<b>New Hampshire</b>	26.4	14.1	57.3	2.1	0.1	0.0
<b>Rhode Island</b>	30.2	21.0	48.8	0.0	0.0	0.0
<b>Vermont</b>	44.6	13.7	40.7	1.0	0.0	0.0

Source: National Center for Education Statistics, Digest of Education Statistics.

## Community College Students Compared with Students at Four-year Institutions

Panel A	Percent of Part-time Students among Undergraduates (2012)		
	Public Two-year	Public Four-year	Private Nonprofit Four-year
United States	54.3	20.6	18.6
New England	60.1	21.2	13.7
Connecticut	65.2	28.1	14.8
Maine	51.8	18.8	15.3
Massachusetts	58.7	17.4	14.5
New Hampshire	61.6	8.8	13.8
Rhode Island	65.9	18.5	7.7
Vermont	-	30.8	9.8

Source: National Center for Education Statistics, Delta Cost Project.

Note: There are no reported data on public two-year institutions in Vermont for 2008 or 2012. Therefore, the data on public two-year institutions in the New England region do not include Vermont.

## Community College Students Compared with Students at Four-year Institutions

Panel B	Percent of Students Aged 25 and Older among Full-time Undergraduates (2012)		
	Public Two-year	Public Four-year	Private Nonprofit Four-year
United States	33.4	16.3	19.3
New England	26.3	11.2	11.0
Connecticut	25.1	17.7	9.4
Maine	36.1	13.1	3.9
Massachusetts	25.3	8.0	13.2
New Hampshire	22.1	5.4	7.6
Rhode Island	18.9	8.6	6.6
Vermont	-	7.9	12.9

Source: National Center for Education Statistics, Delta Cost Project.

Note: There are no reported data on public two-year institutions in Vermont for 2008 or 2012. Therefore, the data on public two-year institutions in the New England region do not include Vermont.

## Community College Students Compared with Students at Four-year Institutions

Panel C	Percent of Students Who Are Black (2012)		
	Public Two-year	Public Four-year	Private Nonprofit Four-year
United States	14.4	14.0	12.3
New England	9.3	5.3	6.3
Connecticut	11.3	8.5	7.3
Maine	1.2	1.0	3.4
Massachusetts	12.6	4.9	7.9
New Hampshire	1.5	1.2	2.4
Rhode Island	9.2	5.9	4.5
Vermont	-	1.7	2.9

Source: National Center for Education Statistics, Delta Cost Project.

Note: There are no reported data on public two-year institutions in Vermont for 2008 or 2012. Therefore, the data on public two-year institutions in the New England region do not include Vermont.



## Community College Students Compared with Students at Four-year Institutions

Panel D	Percent of Students Who Are Hispanic (2012)		
	Public Two-year	Public Four-year	Private Nonprofit Four-year
United States	11.7	8.7	8.3
New England	11.5	5.7	5.6
Connecticut	15.9	8.8	5.8
Maine	1.1	1.0	3.6
Massachusetts	13.6	5.1	6.4
New Hampshire	2.4	2.2	4.0
Rhode Island	15.4	7.5	6.2
Vermont	-	2.8	3.3

Source: National Center for Education Statistics, Delta Cost Project.

Note: There are no reported data on public two-year institutions in Vermont for 2008 or 2012. Therefore, the data on public two-year institutions in the New England region do not include Vermont.

## Community College Students Compared with Students at Four-year Institutions

Panel E	Percent of Students Whose Total Family Income Is Less than \$15,000 (2008)		
	Public Two-year	Public Four-year	Private Nonprofit Four-year
United States	27.2	15.1	14.0
New England	24.1	9.7	10.2
Connecticut	22.9	8.0	8.2
Maine	23.2	10.6	9.6
Massachusetts	27.9	10.7	11.0
New Hampshire	11.9	6.4	6.7
Rhode Island	30.6	10.0	7.3
Vermont	-	8.8	13.7

Note: Data include only dependent undergraduates who applied for federal financial aid.

Source: National Center for Education Statistics, Delta Cost Project.

Note: There are no reported data on public two-year institutions in Vermont for 2008 or 2012. Therefore, the data on public two-year institutions in the New England region do not include Vermont.

## Community College Students Compared with Students at Four-year Institutions

Panel F	Percent of Full-time, First-time Undergraduate Students Receiving Federal Grants (2012)		
	Public Two-year	Public Four-year	Private Nonprofit Four-year
United States	60.6	44.6	44.3
New England	55.4	33.9	32.3
Connecticut	50.5	31.8	25.8
Maine	71.3	45.0	32.6
Massachusetts	56.0	33.4	33.8
New Hampshire	46.0	24.0	33.9
Rhode Island	56.0	36.0	25.6
Vermont	-	33.0	36.3

Source: National Center for Education Statistics, Delta Cost Project.

Note: There are no reported data on public two-year institutions in Vermont for 2008 or 2012. Therefore, the data on public two-year institutions in the New England region do not include Vermont.